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NATIONAL AQUACULTURE ACT OF 1979

96-1

P47-65

HEARING
BEFORE THE
SUBCOMMITTEES ON
CONSERVATION AND CREDIT
AND
DEPARTMENT INVESTIGATIONS, OVERSIGHT,
AND RESEARCH
OF THE
COMMITTEE ON AGRICULTURE
HOUSE OF REPRESENTATIVES
--- NINETY-SIXTH CONGRESS

FIRST SESSION

ON

H.R. 20

JUNE 20, 1979

Serial No. 96-AA



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NATIONAL AQUACULTURE ACT OF 1979

WEDNESDAY, JUNE 20, 1979

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEES ON CONSERVATION AND CREDIT AND
DEPARTMENT INVESTIGATIONS, OVERSIGHT, AND RESEARCH
OF THE COMMITTEE ON AGRICULTURE,
Washington, D.C.

The subcommittees met, pursuant to notice, at 10:10 a.m., in room 1301, Longworth House Office Building, Hon. E de la Garza (chairman of the Subcommittee on Department Investigations, Oversight, and Research) presiding.

Present: Representatives Jones of Tennessee, Baldus, Daschle, Wampler, and Marlenee.

Staff present: John E. Hogan, counsel; William A. Imhof and J. Robert Franks, associate counsels; Peggy L. Pecore, clerk; Robert A. Cashdollar, Humberto R. Pena, Gerald Jorgensen, Wayne Fletcher, and Thomas Adams.

MR. DE LA GARZA. The Subcommittees on Department Investigations, Oversight, and Research and Conservation and Credit will come to order.

This morning the Subcommittees on Department Investigations, Oversight, and Research and Conservation and Credit meet to consider H.R. 20, the National Aquaculture Act of 1979.

As you know, for many years aquaculture was considered a part-time occupation for some weekend fish farmer. Today aquaculture is becoming a recognized business in the United States. Private aquaculture has great potential as an industry that will supply a major source of protein for the future.

Americans are now consuming 1.6 million pounds of shrimp daily, 60 percent of which is caught within 200 miles of our own coasts, and 40 percent imported from other countries.

Since foreign countries export only surplus stock, America will be placed in a most vulnerable position in the case of severe food shortages or in case a decision is made not to export fish products to us.

H.R. 20 is a viable piece of legislation that will give us direction in the field of agriculture. I support this main thrust. However, I would state at the onset that "fish farming" is an agricultural enterprise and should be treated as such.

As it stands now, three Departments would share responsibility for the long-term development of aquaculture, that is, Agriculture, Interior, and Commerce.

We must recognize aquaculture, in fact "fish farming," and that the Department of Agriculture does and can provide services to fish

farmers that other departments cannot adequately provide. Therefore, I hope that we can assure freshwater farmers that the Department of Agriculture will retain its jurisdiction and be given every opportunity to expand its assistance and programs.

[The bill H.R. 20 and reports appear on p. 33.]

MR. DE LA GARZA. I apologize for the absence of some of the members, but our Republican colleagues have a meeting of the Policy Committee, and I do not know what happened to the Democrats.

[Laughter.]

It has been customary to have the witnesses all present their testimony first and then be available for questions. I would like to do that this morning unless one of the witnesses might have other commitments that might pose a problem.

If there is no problem with any of the witnesses, we will proceed in that manner. This will expedite the hearing, and it will allow some of our colleagues who may have some questions time to get here.

Our first witness this morning is Dr. M. Rupert Cutler, Assistant Secretary for Conservation, Research, and Education, USDA.

We welcome you this morning, Dr. Cutler, and we will be happy to hear from you at this time.

**STATEMENT OF M. RUPERT CUTLER, ASSISTANT SECRETARY FOR
CONSERVATION, RESEARCH, AND EDUCATION, U.S. DEPARTMENT
OF AGRICULTURE**

MR. CUTLER. Thank you very much, Mr. Chairman.

I am pleased to have the opportunity to discuss H.R. 20, the proposed National Aquaculture Act of 1979.

With me, Mr. Chairman, are Mr. Bille Hougart, the USDA Aquaculture Coordinator and the Aquaculture Program Manager for the Science and Education Administration; Mr. Jesse Joyner, Deputy Director for Emergency Loans of the Farmers Home Administration; and Mr. George Vohs, Assistant Manager of the Federal Crop Insurance Corporation. They are available to respond to your questions.

H.R. 20 provides for the Secretary of Commerce to develop a national aquaculture development plan in consultation with the Secretaries of Agriculture and Interior, other interested Federal agencies, State agencies, and any appropriate regional fishery management council. The three Secretaries would be responsible for implementing any program under the plan that comes under their respective jurisdiction.

An Interagency Aquaculture Coordination Committee would be established to insure a continuing exchange of aquaculture information and to insure that all Federal agencies involved with aquaculture carry out their activities in a manner consistent with the purposes of the act.

The Secretary of Commerce would be responsible for establishing an information service for aquaculture activities and submitting to the Congress a biennial report on the status of aquaculture in the United States starting September 30, 1981.

The three Secretaries would make contracts or grants to carry out their responsibilities under the plan, including aquaculture demonstration projects, on a matching fund basis. The Secretary of Commerce

would be authorized to grant loan guarantees and administer direct insurance or reinsurance programs for stocks, property, and liability. The Secretary must conduct an annual study to determine if such insurance is available at reasonable rates in the commercial market.

Mr. Chairman, the Department of Agriculture has historically provided services to fish farmers as well as those involved with other farming enterprises. The Department's interest in aquaculture is further established by the Food and Agriculture Act of 1977—Public Law 95-113—which provides a role for the Department in supporting food and agricultural sciences, including aquaculture.

Advice and technical assistance are being provided to individuals in connection with land and water resources appraisals, basic biological principles, and the design and layout of fish farming facilities.

Educational services are provided in all aspects of aquacultural production. The Department of Agriculture, through a memorandum of agreement between the Science and Education Administration's Extension Service and the Department of Commerce's Office of Sea Grant, cooperates in providing field advisory services on marine aquaculture.

Financial support is being provided to colleges and universities for research on many aspects of aquaculture. Research on nutritional value, safety, and marketing of aquacultural products; on waste disposal; and on the economics of various facets of the industry is being conducted.

Vaccines for controlling aquatic animal diseases which are shipped in interstate commerce are produced by private industry but under departmental licensing and supervision. Assistance is provided in disease diagnosis, processing, handling, and marketing.

Loans may be provided to establish aquaculture enterprises and to offset losses occurring due to natural disasters. A more detailed explanation of specific departmental activities in this area is included as an attachment.

Mr. Chairman, do you have the attachment? It is a multipage document which I hope will be printed in the record.

Mr. DE LA GARZA. We do have it, and it will be printed as part of your statement.

Without objection, it is so ordered.

[The attachment appears on p. 80.]

Mr. CUTLER. Mr. Chairman, if I may, I would like to supplement that attachment with two other documents. The first lists loans that the Farmers Home Administration has made for aquaculture purposes. The second describes the background of the Department's Aquaculture Coordinator, Bille Hougart.

Mr. DE LA GARZA. Without objection, these two additional documents will be inserted in the record.

[The material referred to above appears on p. 93.]

Mr. CUTLER. Thank you.

Title XIV of the Food and Agriculture Act of 1977, Public Law 95-113, authorized the Department of Agriculture to expand its aquaculture support programs.

Title IV states:

The Department of Agriculture is designated as the lead agency of the Federal Government for agricultural research * * *, extension, and teaching in the food and agriculture sciences * * * sciences related to food and agriculture in the broadest sense, including the social, economic, and political consideration of * * * aquaculture.

This is contained in sections 1404 and 1405.

Title XV of Public Law 95-113 also includes aquaculture, in addition to agriculture, rural development, and human nutrition, as a basic function of the Department. This can be found in section 1502(a).

Since 1976, USDA has increased its emphasis on aquaculture to give it a higher profile within the Department. A USDA interagency aquaculture work group was established in January 1976 composed of personnel from 11 USDA agencies. The work group has been active since its inception to make the Department responsive to and involved with the aquaculture industry and is currently developing an aquaculture plan for the Department. This plan will be completed this year. As part of this effort, the Department recently convened an aquaculture workshop at which key representatives from the aquaculture community provided input to our planning process.

USDA personnel are also active participants in the Joint Subcommittee on Aquaculture of the Office of Science Technology Policy. This subcommittee is chaired by Mr. David Wallace of NOAA who will also present testimony here this morning. The Joint Subcommittee on Aquaculture operates under the Committee on Food and Renewable Resources, which I chair, as well as the Committee on Atmosphere and Oceans, which is chaired by Dr. Richard Frank, the Director of NOAA.

This subcommittee coordinates aquaculture efforts at the Federal level to avoid duplication with other agencies and to assure optimum Federal involvement in working with the aquaculture industry.

USDA is participating with other key departments and agencies in the development of a national plan for aquaculture under the aegis of the joint subcommittee. A USDA Aquaculture Coordinator has been employed to provide leadership, coordinate aquaculture activities, and develop plans and procedures which would enable the Department to give appropriate consideration to the needs of aquaculture.

Mr. Chairman, the Department of Agriculture is committed to a strong aquaculture program. The USDA aquaculture effort is well coordinated with other Federal aquaculture activities, and we are exploring ways to increase and improve our services to the aquaculture community.

In view of these activities, Mr. Chairman, we oppose H.R. 20 in its present form. However, we would not object to relatively simple legislation to enhance aquaculture in the United States that declares a strong national policy and formalizes actions we have already taken to develop a national plan for aquaculture and which defines the relative roles of the various Federal agencies.

Mr. Chairman, we welcome any questions you have, now or at the conclusion of the presentations.

Mr. DE LA GARZA. Thank you very much. If you will be kind enough to bear with us and await the testimony of the other witnesses, we will have all of the witnesses available for questioning later.

Mr. DE LA GARZA. Our next witness is Mr. Lee R. Brobst, chief of staff to the Senior Deputy Governor, Farm Credit Administration.

We welcome you, sir, and we will be happy to hear from you at this time.

STATEMENT BY LEE R. BROBST, CHIEF OF STAFF TO THE SENIOR DEPUTY GOVERNOR, FARM CREDIT ADMINISTRATION

Mr. BROBST. Thank you, Mr. Chairman.

It is a pleasure for me to appear before your subcommittee. The Farm Credit Administration is the independent Federal agency which regulates and supervises the cooperatively owned lending institutions which comprise the Farm Credit System.

I am here today primarily to share with you some of the experiences the agency and the system have had in the aquaculture industry rather than to proclaim an official position for the agency.

Before dealing with the System's involvement, I would like to provide a brief overview of the Farm Credit System as a whole.

The cooperative Farm Credit System operates under authorities contained in the Farm Credit Act of 1971, as amended, to provide credit and closely related services to farmers, ranchers, producers, and harvesters of aquatic products, agricultural and aquatic cooperatives, rural homeowners, and certain businesses providing farmers with services essential to their on-farm operating needs.

To fulfill these purposes, the country is divided into 12 Farm Credit districts. At the same location in each district, there is a Federal land bank, a Federal intermediate credit bank, and a bank for cooperatives. There is also a Central Bank for Cooperatives in Denver, Colo.

In regard to the Federal land banks and the Federal land bank associations, the Federal land banks make mortgage loans with terms of from 5 to 40 years through 534 Federal land bank associations. Loans are made for literally any purpose for which the owner of farm property would constructively borrow long-term credit. A first mortgage is required on farm real estate as security for these loans. Limited authority exists to provide mortgage credit to farm-related businesses and rural homeowners.

In regard to the Federal intermediate credit banks and the production credit associations, the Federal intermediate credit banks provide loan funds to 429 production credit associations and discount notes of eligible borrowers given to certain other institutions financing agricultural producers. Production credit associations make loans with terms of up to 7 years to farmers, ranchers, producers, and harvesters of aquatic products, rural homeowners, and certain farm-related businesses.

Loans are made for a variety of purposes including operating needs, refinancing and capital purchases related to the production of agricultural products, the production and harvesting of aquatic products, and other requirements of borrowers. There is limited authority for lending to rural homeowners and farm-related businesses.

The 12 district banks for cooperatives serve marketing, supply, and business service cooperatives whose headquarters are within their respective territories. The banks provide these cooperatives, including

aquatic cooperatives, with a complete credit service designed to fill their specialized needs. The Central Bank for Cooperatives participates in the larger loans which exceeds the district bank's lending capacity.

In sum total, the System seeks to further the objective stated in the Farm Credit Act of 1971, of "improving the income and well-being of American farmers and ranchers." It should be noted that System efforts to realize this objective are made at no cost to the taxpayer. Even the operating costs of the Farm Credit Administration, my salary and that of others employed there, rent, and other incidental costs, are assessed to the users of the System.

The loan funds are procured by the sale of bonds and debt instruments to the public which also carry no government guarantee. During the past calendar year, the System, through the sale of securities, was able to obtain nearly \$51 billion in loan funds in this manner.

I turn now to Farm Credit's role in financing aquaculture. It goes back a good many years, albeit a relatively modest role. The System considers aquaculture to be simply one of the many forms of agriculture. In fact, because of this, figures do not exist on the exact number or amount of loans outstanding to borrowers in the aquaculture field. Our institutions, both the banks and the associations, do not segregate the aquaculture loans from other types in their financial reports so it is impossible because of that to say what proportion of FCA's loans are made to those engaged in the aquaculture industry.

In rough terms, though, I would say that, at the present time, the amount would be in the area of \$30 million to \$40 million. The single largest portion of this amount is related to the catfish farmers in Mississippi, Arkansas, and similar Southern areas. The New Orleans district would have the majority of those loans.

A question which might be asked at this juncture is: Why does the Farm Credit System make such a relatively small proportion of its loans to aquaculture? At one level there are, perhaps as many different answers to this question as there are types of aquaculture. But, for the industry as a whole, there are several broad generalizations that I think we can make.

One—creditworthiness. Aquaculture has been and remains a rather specialized business. Supply and demand has been such that profit margins are frequently both thin and unstable. Being a specialized operation with less economic stability than is found in agriculture generally, the risk factor is greater. Farm Credit institutions are user-owned and must absorb any losses which occur. Accordingly, the equity, collateral, and operating characteristics are examined more critically in determining creditworthiness. This is a logical and sound business approach.

Two—lending experience. Early ventures by the System in aquaculture financing were predominantly in the shellfish area—principally oysters. Many of the operations were in the adjoining Chesapeake Bay area. Many of those operations were conducted in State-owned leased waters. The opportunity to service and control such loans presented some problems to land-oriented lenders as our general Farm Credit lenders were. Uncontrollable weather and disease often produced hazards against which normal lending standards were hardly adequate. Problems and losses were experienced at times which made continued financing unattractive.

The advent of catfish and similar types of more controllable aquaculture operations has produced more favorable financing results. Many of these are part of an integral general farming operation which modifies the risk. Feed conversion ratios on those catfish operations, particularly, are generally good and the management "know-how," as we see it, has continued to improve.

The principal limiting factor has seemed to be the economic side of the business. Sufficient demand which creates a market price that would make the rate of return attractive generally would stimulate expansion. System financing through our Farm Credit institutions would generally be available to qualified borrowers who meet the general credit requirements consistent with the standards maintained in general agriculture lending. The System could not provide credit to aquaculture producers who would fail to meet those normal commercial standards for creditworthiness.

The extensive mechanical and technical advances which took place in U.S. agriculture over the last several decades have not been matched by comparable advances in U.S. aquaculture. Our Farm Credit System people tell us that the reason for this may be that neither the Government nor private industry, that is those who sell to and purchase from the producer, have been as extensively involved in the development of aquaculture as it has been in the development of agriculture. As our people see it, the result of all of this is that the business environment surrounding aquaculture is less attractive than it is for agriculture as a whole.

Furthermore, the open seas capture fishing industry for many years has provided a substantial supply of fishery products, creating heavy competition for aquaculture products, which at times tended to dampen the aquaculture interests.

At this point, I would like to clarify that the System finances both aquaculture and the open seas capture fishing operations. The Farm Credit Act of 1971 established the initial authority for open seas fishery loans and a subsequent amendment in 1978 extended the term limitations to 15 years on deserving capital credit loans.

The System adopted a rather cautious approach to aquatic lending in the early 1970's. There were some rough spots in acquiring the credit expertise needed to analyze and service those loans. Becoming conversant with marine law and insurance in order to properly handle this substantially different collateral situation was also a challenge. Some mistakes were made but in total the experience to date has been rather good.

As of May 31 of this year, there were about 2,200 loans outstanding for roughly \$187 million. About two-thirds of this amount is off the west coast, and about one-third is on the east coast, and probably \$10 million roughly is in the gulf area.

Activity in this phase of the System's lending is increasing. That is attributable, in part, to the expanded 15-year term authority granted by Congress last year. However, I also think the System is extending more operating money, which turns over on the short-term basis. It is expected that loans to commercial fishermen will continue to increase, both in number and amount. In comparison, the 12 months ending May 31, 1979, reflect loans made of about \$147 million, compared to \$68 million in the 12 months for the year earlier.

I turn now to the future financing needs of American aquaculture. Again, based upon observations of our System people and our exposure in aquatic lending, it would appear that increased demand and a potentially smaller supply of capture fishery products in relation to the demand, are causing prices at the consumer level to increase. When this produces the potential for a profitable rate of return on investment and labor, production will quite likely expand. The Farm Credit System will be responsive to the credit needs of deserving applicants in this industry. This will be on a practical, businesslike approach on the same basis which the System uses in handling agricultural loans.

Mr. Chairman, these views are the highlights of the issue as we see them. The proposed bill would provide some of the incentive which would facilitate expansion of aquaculture. A word of caution, though—our System people feel that any Government effort should be approached cautiously and carefully so as to not upset the balance in the existing fishery industry and in the normal agricultural production areas.

Also, they believe that stimulation should be possible through support to the private sector operating in these areas with a minimum, perhaps, of direct Government involvement.

Those, Mr. Chairman, are the general views of our System people, and I will be available for questions at any time.

Mr. DE LA GARZA. Thank you, Mr. Brobst. We appreciate your cooperation. If you will remain and hear the other witnesses, we will be grateful.

The next witness is Dr. Robert S. Cook, Deputy Director, U.S. Fish and Wildlife Service, Department of the Interior.

We welcome you, Dr. Cook, and we will be happy to hear from you at this time.

STATEMENT OF ROBERT S. COOK, DEPUTY DIRECTOR, U.S. FISH AND WILDLIFE SERVICE, U.S. DEPARTMENT OF THE INTERIOR

Mr. Cook. Thank you, Mr. Chairman.

I am pleased to be here with you today to discuss aquaculture. As a representative of the Department of the Interior, which houses one of the largest freshwater finfish aquaculture programs in existence, I appreciate your interest in the science.

The commercial aquaculturalist is understandably interested in markets, capital, and insurance—areas in which the Fish and Wildlife Service does not have expertise. However, a sound technological base is the foundation of a successful aquaculture program. Knowledge of fishery biology and culture techniques gained from appropriate research activities will help reduce costs, unlock opportunities for the culture of heretofore untried species, and generally provide greater assurance of economic profit and product quality.

The National Research Council's 1978 report on aquaculture in the United States identified the priority areas of long-term aquaculture research as nutrition and feed technology, genetics, reproduction, health management, and production systems. The industry will also be restricted without a timely system of drug clearance, a working knowledge of the environmental effects of aquaculture, or the opportunity to consider non-U.S. species as candidates for production.

In all of these aspects, the Service is supportive of private aquacultural enterprise. We operate nine fisheries research laboratories, including a fish nutrition lab, two disease laboratories, two warm water fish farming experimental stations, a fish genetics laboratory, an exotic species facility, a fish control lab which conducts research necessary for drug clearance, a cool water species research and development laboratory, and an extensive network of fish hatcheries. I have for the record a list of the laboratories with a summary of their research capabilities, and a map showing the locations of our fish hatcheries.

MR. DE LA GARZA. Thank you very much.

Without objection, this material will be included in the record at this point.

[The above referred to material follows:]

**Fish and Wildlife Service Laboratories
Engaged in Fisheries Research**

Fish and Health Research Laboratory, Leetown, West Virginia--disease identification, control and treatment; field evaluation. Also the site of a developmental hatchery and Fish Health Academy.

Tunison Fish Nutrition Laboratory, Cortland, New York--basic nutritional requirements of trout; practical least cost diet formulation; assessment of diet efficiency; nutritional energetics. Tunison also provides extension services.

Fish Farming Experimental Station, Stuttgart, Arkansas--diagnostics; nutrition research; water reuse and purification; drug testing. Also provides extension services.

Southeast Fish Cultural Laboratory, Marion, Alabama--environmental contaminants; culture methods for selective warm water species; environmentally controlled intensive culture systems. Also provides extension services.

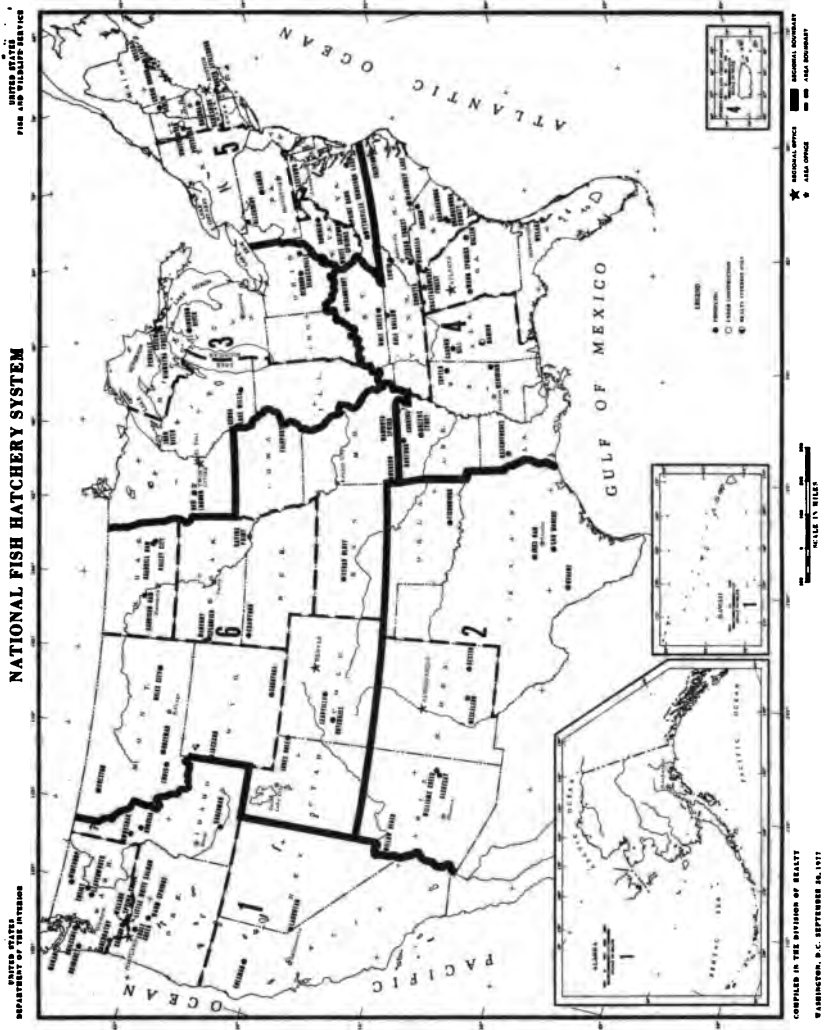
Fish Genetics Laboratory, Beulah, Wyoming--strain characteristics of trout; breeding and selection methodology.

Northeast Pennsylvania Fisheries Research Development Laboratory, Wellsboro, Pennsylvania--reproductive physiology of cool water species; research of cultural methodology for cool water species; cultural techniques for selective species.

Fish Control Laboratory, LaCrosse, Wisconsin--clearance of chemicals used in aquaculture.

Western Fisheries Laboratory, Seattle, Washington--diagnostics; diseases of fish in the wild.

National Fishery Research Laboratory, Gainesville, Florida--study of exotic fishes and their relationship to the environment with a view towards the culture of selected species.



Mr. Cook. Food costs in aquaculture account for 25 to 80 percent of total production costs, and therefore every slight improvement in this area will be favorably reflected in the profit column. In 1932, the Service established the first laboratory in the world devoted exclusively to fish nutrition. Investigations at the Tunison laboratory at Cortland, N.Y., succeeded in not only defining the basic nutritional and mineral requirements for cultured fish, but were primarily responsible for the development of dried fish food which revolutionized aquaculture in the United States and abroad. A diet of this type of fish food has proven sufficient to carry such fish as the Atlantic salmon through their entire life cycle and laboratory experts are now using a computer to develop dried food diets for a wide variety of other fish species.

Through the use of these diets, composed of agricultural products available commercially, private aquaculture operations will be able to raise a wide variety of fish species under completely controlled conditions. Rather than the labor-intensive pond cultures or cage cultures that currently characterize aquaculture activities both here and abroad, mechanized operations could be developed that would be highly profitable. Raising fish in a completely controlled environment would also allow for early detection and control of the various viral diseases that can decimate fish stocks.

The Service has pioneered the identification of fish parasites and diseases, as well as preventive treatments, at the Western Fish Disease Laboratory in the State of Washington and its eastern counterpart at Leetown, W. Va. Great strides have been made in the identification of the sources of such fish viruses as infectious pancreatic necrosis. Control of this rather common fish disease will greatly assist commercial producers.

The use of certain drugs for the prevention and control of the common diseases and parasites of cultured fish is essential to the aquaculture industry. These chemical compounds must be registered with the Food and Drug Administration, a process which usually entails some \$4 million and a minimum of 6 years of preliminary research for initial approval of a drug and \$1 million and 3 to 4 years for compounds already registered for another use. This is obviously beyond the means of many individual producers.

The majority of the necessary research is performed at the Service's Fish Control Laboratory in LaCrosse, Wis. Two drugs cleared for use through Service efforts, sulfamerazine and oxytetracycline, have increased production at our fish hatcheries by 20 percent and are now widely used in commercial aquaculture activities.

Many of the chemicals currently being used in aquaculture were developed for agriculture or some other purpose and must be adapted for use in water. The LaCrosse facility also has the capability to produce specific formulation of these chemicals for the aquatic environment.

Also critical is the whole question of the environmental effects of fish hatchery effluents and of fish culture itself. One sure way to solve the fish hatchery effluent problem is closed cycle culture, and several of our development centers are currently studying closed systems. Virtually nothing is known about the environmental effects of cage culture in estuaries and reservoirs, or salmon enhancement programs on wild salmon populations, or of the impact of commercially inter-

esting exotic species of fish on native aquatic plants and animals. We have established a fisheries research lab at Gainesville, Fla., for the purpose of investigating exotic finfishes, and we have the capability to study other environmental effects.

The subject of genetics is scarcely mentioned in the field of aquaculture and yet the science dominates the field of agriculture. It would be extremely important, for example, to develop more efficient fingerlings bred to be cultured and consumed rather than released into the wild. The Fish and Wildlife Service operates a fish genetics laboratory at Beulah, Wyo., where we are involved in preliminary studies on the genetics of the rainbow trout.

In addition to the fish farming experimental stations in Arkansas and Alabama which are completely oriented to the development of freshwater aquaculture practices, the Fish and Wildlife Service administers 88 fish hatcheries producing over 40 species of fish. Each hatchery demonstrates to fish farmers and the general public the most up-to-date, tried and tested techniques in fish culture as well as fundamental concepts in biology and conservation.

Five development centers coordinate the findings of the geographically scattered research installations for application to the production problems found at the hatcheries. These centers are presently working in the areas of environmental controls, pollution abatement, diet formulation, quality control, production methods and equipment, and training.

At 10 locations across the country, the National Fish Hatchery System has approximately 20 hatchery biologists who function as fish disease and fish husbandry specialists for Service and State problems. The Service also offers advanced training at the Fisheries Academy at Leetown, W. Va., to educate public and private sector fishery scientists in all aspects of research and production.

In cooperation with State universities and conservation agencies, the Service operates 25 Cooperative Fishery Units. More than half of these units conduct investigations concerning various aspects of aquaculture. Findings produced through these programs are channeled into the extension services of the States, the Department of Agriculture, and Sea Grant.

In addition, a number of Indian tribes, particularly in the Northwest, have with our assistance engaged in aquaculture development in recent years and we expect these programs will become active business enterprises.

Service technical research and development efforts on freshwater finfish have and will continue to benefit aquaculturalists, and we intend to press forward vigorously with our work in the field.

The Leetown facility is now being renovated and expanded into a National Fisheries Center. When completed, the facility will be the most advanced fishery research, development, and training center in the world. Located within the complex itself will be an experimental fish hatchery to develop new strains of fish for production and use in research, a water quality unit to determine the best quality waters for propagation of various species, the Fisheries Academy, and an expanded Eastern Fish Disease Laboratory. Dedication of this laboratory, renamed the National Fish Health Research Laboratory, took place on April 28, 1979.

The Fish and Wildlife Service's Fish Control Laboratory at La Crosse, Wis., has recently been expanded. In addition to their work in clearing chemicals for aquaculture use, which I discussed previously, the enlarged facility has a "water modeling" capability, allowing us to duplicate any water chemistry, including brackish and saltwater. In this way, we can structure our research to benefit aquaculture all over the world.

We are also near completion of a new facility, the Northeast Fishery Research and Development Laboratory at Wellsboro, Pa. The scientists there will work principally on the culture of cool water fish.

In fiscal year 1978 the Service spent \$4.6 million on aquaculture related research. In fiscal year 1979, we will spend approximately \$25 million on various aquaculture activities, \$5.7 million of which will be used for research.

We do realize that our Service does not possess all the expertise or all the facilities necessary to resolve the multifaceted problems of aquaculture. These problems should be attacked on a broad front by all interests concerned, and duplication of effort should be avoided.

To this end, the Department of the Interior is negotiating a Memorandum of Understanding with the Departments of Commerce and Agriculture to formally define responsibilities. In addition, the Joint Subcommittee on Aquaculture under the Federal Coordinating Council for Science, Engineering, and Technology, composed of 13 Government agencies, has made considerable progress in fostering coordination.

The subcommittee has set up a task force to develop a comprehensive aquaculture plan to facilitate future Federal and private aquaculture efforts. The Fish and Wildlife Service is providing technical and policy staff in the preparation of this document, scheduled to be completed this coming September.

We are opposed to H.R. 20 in its present form. While we certainly recognize the importance of aquaculture and the need for efficient and appropriate programs to support the industry, many of the actions required by H.R. 20 are already underway. We would have no objection to a relatively simple bill which would state an aquaculture policy, reaffirm the actions taken with regard to agency responsibility and interagency coordination, and call for a national aquaculture plan.

We look forward to working with your subcommittees to accomplish our mutual goals.

Mr. DE LA GARZA. Thank you very much, Dr. Cook. We invite you to wait for questions later.

Our next witness is Mr. David H. Wallace, Director, Office of International Fisheries Affairs, the National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

We are happy to have you with us, Mr. Wallace.

Please proceed as you wish.

STATEMENT OF DAVID H. WALLACE, DIRECTOR, OFFICE OF INTERNATIONAL AFFAIRS, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE

Mr. WALLACE. Thank you, Mr. Chairman.

I welcome the opportunity to appear this morning to comment on H.R. 20, the National Aquaculture Act of 1979. I am only to

represent the Department of Commerce, but also in my capacity as Chairman of the Joint Subcommittee on Aquaculture of the President's Federal Coordinating Council on Science, Engineering, and Technology.

With me are Mr. Robert Wildman, Associate Director of the National Sea Grant College Program, and Mr. Ronald Steinberg, from the Office of General Counsel of NOAA.

H.R. 20 provides that the Secretary of Commerce would be responsible for developing a national aquaculture department plan in consultation with the Secretaries of Agriculture and the Interior, other interested Federal agencies, State agencies, and any appropriate regional fishery management council. All three Secretaries would be responsible for implementing any program under the plan that comes under their respective jurisdiction. An Interagency Aquaculture Coordination Committee would be established, consisting of the three Secretaries and representatives of six other Federal agencies, to insure a continuing exchange of aquaculture information and to insure that all Federal agencies involved with aquaculture are carrying out their activities in a manner consistent with the purposes of the act. The Secretary of Commerce would be responsible for establishing an information service for aquaculture activities. Also, she must submit to the Congress a biennial report on the status of aquaculture in the United States starting September 30, 1981.

The three Secretaries would be authorized to make contracts or grants to carry out their responsibilities under the plan, including aquaculture demonstration projects, on a matching fund basis. The Secretary of Commerce would be authorized to grant loan guarantees up to \$150 million outstanding at any one time. Additionally, the Secretary would be authorized to administer direct insurance or reinsurance programs for stocks, property, and liability. The Secretary must conduct a study annually to determine if such insurance is available at reasonable rates in the commercial market. If the study indicates a need, the stock insurance program would be mandatory; the property and liability, discretionary. The face amount of insurance issued and outstanding at any one time could not exceed \$125 million. No insurance could be issued after September 30, 1982.

A Federal aquaculture assistance fund would be created in the Treasury to be used as a revolving fund to carry out and administer the loan guarantee and insurance programs. Appropriations to the fund for such sums as may be necessary would be authorized without fiscal year limitation, beginning with fiscal year 1980. For purposes other than the fund, appropriations are authorized for Commerce—\$11 million for fiscal year 1989; \$14 million for fiscal years 1981 and 1982; Agriculture and Interior—\$3 million for fiscal year 1980; \$5 million for fiscal years 1981 and 1982, each.

Our Department has no objection to the concept of simple legislation designed to insure that Federal programs and policies related to aquaculture fulfill their potential for supplying food, employment, and recreation, and contributing to the Nation's economy.

However, Mr. Chairman, we are strongly opposed to the bill in its present form. We recommend that some modifications be made in certain specific provisions of the bill.

There has been considerable discussion in the course of development of aquaculture bills prepared in the last few years about which agency, if any, should assume the lead role. Various bills have assigned this role either to the Department of Agriculture or the Department of Commerce, and H.R. 20 does the latter.

Our Department has a long history of activity in aquaculture, stretching back nearly 100 years when the old Bureau of Fisheries began to raise cod, lobsters, and other species on the Atlantic coast and salmon on the Pacific. This activity has not ceased in the intervening years, and we have expanded our research and development steadily. It is our firm intention to continue this activity.

I might point out, Mr. Chairman, that we have laboratories in Milford, Conn., doing research on oysters, clams, and other shellfish. We have disease studies on marine animals going on at our Sandy Hook Laboratory. We have research activities going on in Galveston, Tex., in our laboratory there on shrimp cultivation and other organisms. We are also carrying on salmon aquaculture studies at our center at Manchester, Wash.

We also have numerous aquaculture activities being carried on at various academic institutions around the United States as part of our national sea grant program.

However, in spite of all of these things, it is apparent to us that our efforts can be more productive if they are coordinated with those of the other Federal agencies interested in aquaculture. It was with this conviction that we led an effort to bring these agencies together a few years ago in an interagency aquaculture committee, under the sponsorship of the Interagency Committee on Marine Science and Engineering. We believe that substantial cooperation and coordination have taken place during the nearly 3 years of the existence of that committee, even though it was operating as a sort of lame duck following the abolishment of it.

It has now been reestablished under the aegis of the President's Federal Coordinating Council on Science, Engineering, and Technology. Two committees of FCCSET, the Committee on Atmosphere and Oceans, headed by Mr. Richard Frank of NOAA, and the Committee on Food and Renewable Resources, headed by Dr. Cutler, who has just testified here, have adopted the old ICMSE Subcommittee as the Joint Subcommittee on Aquaculture.

I have been serving as chairman of the joint subcommittee. The membership in this includes some 11 Federal agencies who have been involved in aquaculture themselves, plus the Office of Science and Technology Policy—OSTP—and the Council on Environmental Quality—CEQ—who are ex-officio members.

The work of the subcommittee, both in its original form and as it has now been reorganized, has been notable both for solid accomplishments and for the cooperation that has been achieved among the agencies.

Among the important cooperative activities have been consultations with OSTP and congressional staffs on aquaculture legislation. Among the topics discussed has been the question of which agency should be given the lead in aquaculture. Representatives of the three major agencies involved—Commerce, Agriculture, and Interior—have had a number of meetings; and we all believe that the responsibility for various

activities in aquaculture can be defined logically. This matter is now under review in the Departments and we expect to reach agreement soon on an appropriate division of responsibility.

We are of the view that this arrangement will overcome the problem of which agency should have the lead in aquaculture. We are confident that adequate coordination can be provided through the mechanism of the Joint Subcommittee on Aquaculture. We therefore suggest that H.R. 20 be changed to reflect the agreement that we expect will be reached among our three agencies.

Mr. Chairman, the aquaculture bill that was passed by the Congress last session, H.R. 9370, was vetoed by the President. In the veto message, the President included a statement that:

I believe we should more carefully assess the need for additional programs in this area. In particular, I am concerned about offering major new Government subsidies such as a loan guarantee and insurance programs unless and until a clear need for them is established.

The administration position on this issue remains the same.

Furthermore, we are opposed to initiating a new aquaculture demonstration program along the lines envisioned by H.R. 20. The need for the Federal Government to support large-scale developmental aquaculture facilities and systems especially production-scale facilities is questionable.

The Federal efforts should address basic research questions and provide for the initial testing of laboratory results, and the private sector should be expected to undertake and construct the necessary facilities for production. Accordingly, we recommend that section 8 be deleted at this time.

My Department has taken part in activities of the Joint Subcommittee on Aquaculture designed to make the assessments declared by the President to be necessary before loan guarantees and insurance programs in aquaculture are authorized in legislation. A comprehensive study has been designed, approved by the joint subcommittee, and will be underway in 2 to 3 weeks. It is expected that the results of this study will be available in about 12 months.

We suggest that sections 9, 10, and 11 of the bill, authorizing loan guarantees, insurance, and establishing the funds, be modified to defer action on these matters, and to request the results of the study.

Mr. Chairman, we believe that the language in section 5(b)(2) relating to production and sale of seed stock by government facilities requires modification or elimination. This section states that:

*** * * The Secretary * * * may produce, and sell at cost, seed stock for aquatic species when privately produced seed stock is unavailable, unreliable, or insufficient in quantity to meet production or research needs.**

While we recognize the need for seed to carry on private aquaculture we see a danger that government hatcheries may be obliged to devote an inordinate amount of their effort to supplying seed stock, even though this feature is a discretionary function.

Once a hatchery operation begins to produce seed for sale, it may be difficult or impossible to halt this practice even though private sources might be able to develop in the absence of nontaxable public operations. Further, continued productions of seed stock might interfere with research and other activities which are more appropriately Government's role.

We suggest that section 6, relating to the Interagency Aquaculture Coordinating Committee, make reference to the existing Joint Subcommittee on Aquaculture, and propose some way to amalgamate the proposed committee with the existing one established by the executive branch. This could be accomplished by adding certain agencies to the membership, and modifying the functions of the proposed committee to parallel or coincide with those cited in the charter of the Joint Subcommittee on Aquaculture.

Mr. Chairman, H.R. 20, like the aquaculture bill that was passed by the last Congress, requires that the Federal agencies cooperate in producing a national aquaculture plan. The plan would include a program of research and development for each aquatic species that is determined to have significant potential for culturing. The plan would also describe actions that should be undertaken to carry out this program, and the responsibilities of the various groups involved. My Department believes that such a national aquaculture plan is essential for the orderly and expeditious growth of aquaculture in the United States, and we have taken a lead in the efforts of the Joint Subcommittee on Aquaculture to develop such a plan.

A working group of representatives of the member agencies of the joint subcommittee has been engaged in this task for the past 2 months.

Full-time representatives from the Department of Agriculture, Interior, and part-time representation from other agencies, such as the National Science Foundation, have been carrying on this work.

We have held a small workshop involving members of industry, the States, and the academic community. My Department has supplied a full-time staff, and we have housed the working group in one of our buildings. In addition, we are supplying a substantial part of the funding for this effort. We believe, Mr. Chairman, that the bill should be modified to recognize this effort by the Joint Subcommittee on Aquaculture, and make a formal request for its results.

A number of studies over the last several years have indicated that one major deterrent to the development of aquaculture in the United States has been the multiplicity of regulations and permit requirements of all levels of government from local boards and commissions, up through various State and Federal agencies. Even with all the assistance to industry provided in H.R. 20, in many instances it would probably be uneconomic or impractical to carry on aquaculture because of these layers of restrictions. Obviously, some controls are necessary to protect the public health, to reconcile positions between possible conflicting uses, particularly in the coastal zone, and to preserve proper responsibility at all levels of government.

However, in some areas at least we seem to have gone far beyond these requirements to the point where legitimate aquaculture operators are threatened with failure.

The existing Joint Subcommittee on Aquaculture is initiating an indepth study of this problem, and it will be done through the leadership of the Department of Interior. We expect a final report sometime in 1980. It is anticipated that this study will identify what action is needed, either legislative or administrative, to correct duplicative and deterring regulations.

Mr. Chairman, our Department attaches considerable importance to development of U.S. aquaculture. Through the Joint Subcommittee

on Aquaculture, we have been working with the President's Office of Science and Technology Policy on this important matter, and are ready to assist your committee in producing a bill that would accomplish the objectives we have discussed today and which would promote the redevelopment of aquaculture.

Mr. Chairman, this concludes my prepared statement.

Thank you.

Mr. DE LA GARZA. Thank you very much, Mr. Wallace.

We invite you also to remain for questioning later.

Our next witness is Dr. Wayne Shell, head, Department of Fisheries and Allied Aquacultures, Auburn University, Auburn, Ala.

We welcome you, Dr. Shell.

We will be happy to hear from you.

**STATEMENT OF E. W. SHELL, HEAD, DEPARTMENT OF FISHERIES
AND ALLIED AQUACULTURES, AUBURN UNIVERSITY, AUBURN,
ALA.**

Mr. SHELL. Thank you, Mr. Chairman.

It is a pleasure to have this opportunity to talk with you about aquaculture. I cannot offer you much encouragement. I do not know if my testimony will help much. I have been coming to Washington for 15 years talking about aquaculture, both to Congressional committees and to various Federal agencies. Relatively little has happened at this point.

In this respect, I feel somewhat like Br'er Rabbit did fighting the Tar Baby. You just keep beating the thing and nothing happens. It just sits there.

I am here representing Auburn University. The agricultural experiment station at Auburn did its first research on fish farming near the turn of the century. Those early efforts were largely transitory. We began in earnest to study fish farming some 45 years ago. Today we are providing information and advice to 2,000 catfish farmers and approximately 25,000 farm pond owners in Alabama. In addition, we provide information and technical assistance in support of literally hundreds of thousands of fish farmers throughout the developing world.

In testifying regarding this proposed legislation, I am also representing a large segment of middle income Americans whose disposable income has decreased 17 percent over the last 10 years. In providing this testimony, I sincerely hope that I can keep the needs of our fish farmers, the fish-buying consumers and the taxpayers in proper perspective. Please note that for the sake of simplicity I am using the term "fish farmer" in the broadest possible context.

Any Federal effort to enhance aquaculture in the United States should be organized around the needs of the fish farmers, present and future. Following is a list of inputs required by fish farmers to produce crops of fish: (1) a suitable economic environment; (2) an equitable regulatory environment; (3) land—ponds; (4) water; (5) capital; (6) labor; (7) seed—fingerlings; (8) feed and/or fertilizer; (9) equipment and chemicals; (10) markets; and (11) information—research, extension, demonstration, and training.

Most of these inputs in the list can be supplied most effectively by the private sector. In my opinion, the Federal Government should

supply only those needs that cannot be supplied by the private sector or the State government. What I hear myself saying is that I see limited need for Federal involvement in aquaculture. I think this is true.

Given a suitable economic and regulatory environment, aquaculture in the United States will grow and grow rapidly. Aquaculture can compete effectively in the marketplace for land, labor, capital, and markets without significant Federal intervention. If we are lucky enough or diligent enough to keep the Federal Government from forcing crutches on a healthy growing industry, aquaculture should be able to play a significant role in the American economy by the turn of the century.

There is a need for some Federal involvement in aquaculture. Because of the national and international implications of improved human nutrition, food import and export, balance of payments problems, the improvement of rural life and stabilization of feed grains markets, the National Government must be involved.

The question is then, how can the Federal Government become involved and represent the national interest without providing unneeded, debilitating crutches that will lead to the permanent crippling of the industry.

I see the Federal Government being involved in aquaculture in three ways, and only three ways.

One, by creating a more suitable economic environment for the development and survival of small businesses in the United States.

Two, by reconciling, with a positive bias toward productivity, the entangled regulatory web impinging on the development of aquaculture.

Three, by encouraging—and here I say encouraging—private, State, and local government initiatives to develop and disseminate information needed by fish farmers.

Remember, I am saying that the only thing that the Government really needs to do for private industry like fish culture, is to provide them with information.

I have a few suggestions as to how items one and two might be implemented. Both the economic and regulatory environments are exceedingly complicated areas that do not lend themselves readily to change. I feel that the Federal Government can have a role in providing the third need and that is the information—research, extension, demonstration, and training—to fish farmers.

Even in this area, the fish farmers or the private sector can provide for their own needs with respect to information, but the information can usually be obtained and disseminated more rapidly through the participation of the public sector. Note that I have emphasized the word “usually” here.

Information is a unique commodity. I think we should all realize that. It is of greatest value when it answers a specific farmer’s question or solves a specific problem for him. Obviously, to have maximum impact the information should be as site specific as practical. Obviously, this means that most of this information must be derived and disseminated in close proximity to the fish farmer. Direct Federal intervention at this level is not practical. State and local government must bear the primary burden of providing information if it is to be effective.

Federal support and assistance—and I think this is an important thing as we think about Federal intervention in aquaculture—in providing information to fish farmers should be predicated on strong local effort to meet the needs of a local constituency. Unless local fish farmers are convinced of the value of purchasing information from State and local research, teaching, and extension agencies through the use of taxes, and unless they are willing to work to see that the necessary funds are provided and used effectively for this purpose at the local level, I cannot see the rationale for providing Federal support to those agencies or support for aquaculture in that State.

Where fish farmers or legislatures do not see enough promise in aquaculture to invest State funds in providing information for the industry in their State, I see little reason for providing Federal funds.

Given the present Federal budget situation, I consider it highly unlikely that very much new money will be made available for aquaculture. Given the limited amount of funding likely to be available, it should be used where it will have the greatest impact—in States that have already committed significant amounts of their own funds or that are willing to commit their own funds to providing information to fish farmers.

The development and dissemination of information should be done on a cooperative basis between the Federal and State Governments. There is already ample precedent for this arrangement in the Department of Commerce's sea grant program, the Department of Interior's cooperative fisheries unit program, and the Department of Agriculture's cooperative research and extension program.

I feel that in-house Federal research and extension in support of fish farmers should be kept to a minimum. For maximum effectiveness, aquacultural researchers and extension agents should be linked closely to the producers and consumers. Federal researchers are too well insulated from the necessary accountability provided by this close contact.

I fully realize that those remarks would appear to be a blatant case of self-serving testimony. If I were a Federal research worker, I would be sure of it. The fact is, however, that the action in aquaculture is on the farms. The most effective public service—research extension and training—will be located and administered as close to the action as practical.

So far I have commented on the needs of fish farmers and what Federal Government might do to meet these needs. What legislation is required to allow them to meet these needs? In my opinion no additional legislation is needed. If the Departments of Commerce and Interior are doing everything they say they are now doing in support of fish farmers, and if the Department of Agriculture carries out the congressional mandate for the support of aquaculture as described in the 1977 farm bill, I can see no reason for additional legislation except possibly to record the current sense of Congress with regard to the potential importance of aquaculture in the United States to encourage the various departments to give adequate support to aquaculture as called for under current legislation and to provide specific instructions on the roles of the various Federal agencies in meeting the needs of fish farmers.

Let me digress just a moment from my prepared testimony to needle my colleagues, my good friends in Interior and Commerce. You cannot help but be impressed by their effort, but when we compare the efforts that have been made to the fact that we are importing 75 percent of the fish that we consume, we can only say, "Lord, protect us" for the amount of money required by the Federal Establishment to reduce this to 25 percent.

Although I cannot support the need for specific legislation at this time, I feel that the Committee on Merchant Marine and Fisheries is to be complimented for taking this interest in aquacultural development in the United States. Regardless of the fact of this bill, by efforts, that committee has forced the attention of Congress and the Executive branch on aquaculture.

Now for a few general comments on the provisions in H.R. 20. In making these comments, I am endeavoring to ascertain the likely impact of each of the provisions on existing individual fish farmers and those likely to be engaged in fish farming in the future.

I turn now to the national aquaculture development plan. I cannot imagine how this plan would be of any benefit to fish farmers. The plan, if developed and updated according to the provision is a form of guaranteed employment for a number of Federal employees, but will contribute little to the day-to-day operation or profit and loss statements of people making a living growing fish.

Regarding the discretionary functions, this provision would appear to be a request for blanket approval to construct concrete, steel, and glass monuments to Congressmen and local government officials in the name of aquacultural development. Past and current expertise—and I would like to underline that—with the location and operation of these Federal facilities provide no reassurance that they would meet the needs of more than a few farmers.

In regard to the information services provision, farmers need information and they need specific information. The information likely to be collected in a National Information Center is too remote, too un-specific and too difficult to obtain. If National Information Centers were effective we would not need extension agents. All of the States where aquaculture is important will have to build and maintain effective information service in support of their extension agents. I see little value in establishing a costly national facility that will receive little use. I would suspect that 95 percent of the requests that would come to a national center could be met by effective State information services.

I turn now to the coordination of national activities. Past experience indicates that there is not likely to be effective coordination at the national level. Empire building with the tacit approval and encouragement of friendly Congressional committees has been common. Creation of this new committee would only give each of the empires opportunity to judge each other's strengths and weaknesses on a continuing basis. Certainly this committee will accomplish little of direct benefit to fish farmers.

A comment on another provision—aquacultural demonstration projects. New developments in aquaculture should remain in the experiment stations and field stations until most of the constraints to profitability have been eliminated. Once this stage is reached, there

is adequate private risk capital to try the techniques under actual commercial conditions. This provision attempts to bypass the experiment station stage that has proved so useful in agriculture.

I turn now to the provision dealing with the guarantees of obligations. With the current hue and cry to reduce the involvement of the Federal Government in the private sector, it is amazing that Congress would propose the guarantee of obligation in an industry that is progressing as well as aquaculture. This provision will do little more than to attract poorly committed entrepreneurs to aquaculture. Providing this crutch to a young industry is a sure way to create an old cripple.

This provision provides a mechanism to strew the aquacultural landscape with the bones of federally guaranteed white elephants. If there is adequate information available to design, build, and operate an aquacultural facility, private risk capital will do it. In the absence of such information, the Federal Government is not justified in guaranteeing obligations to finance such an operation.

My next comment is on the provision regarding insurance against losses. Once sufficient information is obtained on various farming systems to extract actuarial data, the insurance industry will likely provide protection at a reasonable cost. There is no justification for the Federal Government to provide the protection in the absence of this data. Nonactuarially sound insurance would also be a crutch to the industry and would encourage the persistence of marginal operators.

I turn now to the provision relating to the Federal aquaculture assistance fund. One of the principal problems with the availability of adequate risk capital to support the development of a new small business-oriented industry like aquaculture is the presence of the Federal Government in the Nation's credit market. This provision would provide another excuse to go more deeply into the credit market and to continue to restrain the amount of private capital available. I do not believe that there is justification for increasing the Federal intrusion into the private sector to this degree in the case of aquaculture.

I speak now to appropriations. The Departments of Commerce and Interior are already claiming the expenditures of considerable amounts of money for the support of aquaculture. For example, in 1975 the Department of Commerce spent \$6.9 million and the Department of Interior spent \$4.3 million. I am sure these amounts have increased since 1975. If these amounts of Federal funds were sharply focused on the needs of fish farmers, present and future, and if the amount spent by USDA could be increased to near the Department of Commerce level, I do not think additional funds would be needed at this time.

Assuming that USDA spending would be increased to approximately \$5.5 million, the total expenditure for aquaculture by these three agencies in providing research and information would be over \$16 million annually. If the major aquacultural States could be encouraged to match a Federal input of \$16 million, this would make over \$30 million available for providing information in support of fish farming. It seems to me that this would be an adequate level of funding for a relatively new industry, like aquaculture, at this time.

I would suggest that Congress study carefully the present utilization of funds to see how accurately they are being focused to meet pro-

ducer needs and to recommend ways to more sharply focus the effectiveness of those funds if there is a need to do so.

I appreciate the opportunity to testify to this committee on this important matter. If my comments have seemed frivolous or facetious, I apologize. If my comments have seemed to denigrate the sincere efforts of Congressmen and their staffs, I also apologize for that. Believe me, aquacultural development in this country and throughout the developing world is not a frivolous matter to me. I have invested 30 years of my life in looking for better ways to support fish farmers. If my comments seem to belittle the efforts of others, it is not intended that way at all. I simply want to do whatever I can to counteract those activities that I feel are counterproductive in supporting people trying to make a living growing fish.

I appreciate this opportunity, and I will be pleased to stay and answer questions later on.

MR. DE LA GARZA. Thank you very much, Dr. Shell.

Our last witness is Dr. Wallis Clark, Institute of Marine Resources, University of California, at Davis.

We welcome you, and we will be happy to hear from you at this time.

STATEMENT OF WALLIS CLARK, INSTITUTE FOR MARINE RESOURCES, UNIVERSITY OF CALIFORNIA, DAVIS, CALIF.

MR. CLARK. Thank you, Mr. Chairman, and members of the subcommittees.

I am pleased to have the opportunity to testify today. I will keep my comments as brief as possible, especially inasmuch as what I was going to say has already been said at this hearing today.

In order to give you a brief background of my interest, I am from the University of California. California has had a long history in aquaculture, and it has a great interest in aquaculture. It would like to follow the example set by California agriculture.

Our State is ideally suited for aquaculture. We have a vast coastline with both cold and temperate waters. We have large fresh water resources with cold water in the mountains and warm water in the south and central valleys.

California has legislation pending in Senate bill 52 which is the California Aquaculture Development Act which is designed to facilitate the writing of the California aquaculture program.

Much of this program is being designed to aid the private businessmen in the State, especially in terms of the maze of permitting, et cetera, which an aquaculturalist is faced with.

The University of California experiment station has initiated an aquaculture program which is housed at both the Davis campus and the Bodega Bay marine laboratory, working on both marine and fresh water species.

This program is designed to pursue research applicable to California aquaculturalists, make known the results of such research through extension to State constituents, and aid these constituents with services and engineering, pathology, nutrition, physiology, et cetera.

The State Department of Resources in the State of California has just announced a program for which they are seeking legislative as-

sistance. This is a 10-year program designed to rejuvenate salmon and steelhead populations in California at a cost of \$500 million.

At the University of California at Davis another program to rejuvenate natural populations has just been established with assistance from the Department of Interior. This is a prototype sturgeon hatchery—the first such hatchery in the United States.

So, to recap very briefly, I think it is obvious that the State of California has a great interest in aquaculture and is making a very strong commitment to aquaculture.

Much of our work done in the past, we can say is directly the responsibility of help obtained through the U.S. Department of Commerce—NOAA. The sea grant program has continually helped to fund our aquaculture endeavors in the State and has helped maintain a level and helped us increase a level of expertise in the State of California.

We have also had considerable assistance from the Department of the Interior.

I must question the money the U.S. Department of Agriculture is spending on aquaculture since the State of California has seen very little of this money, and is not even really familiar with the sources of this money or how to obtain these funds. However, we do recognize that the mechanisms within the Department of Agriculture are available.

In essence, since we have been unable to obtain assistance from the U.S. Department of Agriculture, our fresh water industry in the State of California is nowhere near the level at which they could have been with some financial assistance.

While we believe legislation is necessary, we question H.R. 20, especially the loan guarantee program which we believe already exists through the FmHA authority. As far as the insurance program is concerned, we understand there is legislation pending which would cover this portion of the bill, and we consider the authorization for appropriations between the three departments inappropriate.

Further, we question the very low level of appropriations with the Department of Agriculture.

Finally, if the United States is going to develop the base and service expertise necessary, far greater appropriations will be required than are outlined in H.R. 20, or some mechanism to reallocate moneys within the various departments listed.

The United States has a long ways to go to catch up with the rest of the world.

Let me at the same time in questioning H.R. 20, say this. We feel strongly, however, that aquaculture legislation is necessary.

First, legislation is necessary to legitimize aquaculture.

Second, legislation is necessary to authorize appropriations.

Finally, legislation is desperately needed to explore ways to ease the maze of obstacles an aquaculturalist is faced with in terms of regulations, permitting requirements, et cetera.

Mr. Chairman, let me thank you for the opportunity to testify before this committee.

Mr. DE LA GARZA. Thank you very much, sir.

If you would remain where you are, we would ask the other witnesses if they would come to the witness table.

Dr. Shell, I want to commend you on your testimony. I hope you will go back and say hello to Dean Rouse. I have had some of your catfish. It was smoked and cooked.

Let me advise you that your testimony is direct and very forceful and it talks about Congressmen and Congress, but the bill has only three names on it. It has Mr. Murphy, Mr. Breaux, and Mr. Forsythe, so it should be directed to those three individuals and not to the rest of us.

Mr. Jones.

Mr. JONES of Tennessee. Thank you very much, Mr. de la Garza.

I also want to express my appreciation to the gentlemen. They have given constructive testimony.

I, like the chairman, hope you will direct your criticisms and questions to the three men who have cosponsored the bill.

Mr. Chairman, I have one question that I would like to ask Dr. Cutler.

I believe all of you gentlemen said you were opposed to the legislation.

Dr. Cutler, you said that you are opposed to H.R. 20 in its present form but that you would not object to simple legislation to enhance aquaculture in developing a national aquacultural policy.

Have you provided any substitute legislation to accomplish that, or have you given it any thought?

Mr. CUTLER. We would be happy to provide the committee with that language, Mr. Chairman. However, we have not done so yet.

Mr. JONES of Tennessee. Mr. Chairman, it might be good if we receive that.

Mr. DE LA GARZA. That would be appreciated. Any assistance you could give us in redrafting or suggestions of amendments would be appreciated.

Without objection, the record will remain open at this point for the purpose of inserting this additional information.

[The above referred to material appears on p. 97.]

Mr. JONES of Tennessee. Mr. Wallace, do you feel that the Department of Commerce has the necessary facts, figures, and actuarial data to operate a fish insurance program?

Mr. WALLACE. Mr. Jones, up until this point the Department of Commerce certainly has not been involved in an insurance program of this type. We have not been seeking this legislation or this support.

Mr. JONES of Tennessee. Then your answer would be that so far you have done nothing as far as an attempt to provide an aquaculture insurance program. Is that right?

Mr. WALLACE. That is correct as far as aquaculture is concerned.

Mr. DE LA GARZA. Dr. Cutler.

Mr. CUTLER. Mr. Chairman, as you know, H.R. 4119, a bill introduced by yourself to improve and expand the Federal Crop Insurance Program and reported by the Subcommittee on Conservation and Credit on June 6, covers the aquaculture industry.

Mr. JONES of Tennessee. I am not sure aquaculture would be covered under my bill.

Thank you, Mr. Chairman. That is all I have.

Mr. DE LA GARZA. Mr. Wampler.

Mr. WAMPLER. Mr. Chairman, I want to apologize to the subcommittees and the witnesses for my late arrival. We were having a Republican conference and it was necessary that I be there. It was not indicative of my lack of interest in the subject matter or my lack of appreciation for the testimony. I certainly will review it very carefully.

Mr. Chairman, I understand that the President's reorganization project's recommendation on food and nutrition in December 1978 was for the creation of an aquatic foods agency in the Department of Agriculture.

I assume this was to promote the development, marketing, and the use of fish as a food source, both domestically and internationally.

I also understand that the emphasizing of fish as food was a primary recommendation of the congressionally mandated Eastland fishery survey which was completed in July 1977. One of the witnesses this morning alluded to the fact that we are exporting fish, but on balance we are a net importer to the tune of about \$2.6 billion's worth. This means there is a trade deficit of about \$2 billion which, I think, could be overcome with an intelligent and effective national policy relating to aquaculture.

Fish and products of fish, I think have been well recognized for many years by nutritionists as being very desirable as food. Speaking for myself, I think that in the 1977 farm bill in title XIV, we did address ourselves to this question. As far as this committee and the Congress could, in passing this legislation, I think it indicates that the Department of Agriculture should be the lead agency inasmuch as it is the only Department of the Government that is primarily concerned with the production of food.

On March 1 of this year, I introduced H.R. 2588 which has a number of cosponsors. The short title of the bill was the Department of Agriculture Restoration Act of 1979. Mr. Chairman, in the bill it calls for the transfer of certain functions from the Departments of Commerce, Interior, and Health, Education, and Welfare. Certain functions would be transferred that exist there now to the Department of Agriculture simply to gather them under one agency. I happen to feel that the Department of Agriculture is the logical agency that should be coordinating and implementing our efforts in this regard.

I do not know whether any of the witnesses this morning have had an opportunity to examine the provisions of H.R. 2588, the bill I alluded to.

Have any of you examined it, or would you care to make any comments on what it calls for?

Mr. CUTLER. I am familiar with the bill, Mr. Wampler. We are, of course, guided by the President's reorganization project and the President's decisions with respect to the recommendations that came from the project.

As you know, there were several study groups within that project that came to different conclusions as to what the optimum organization of the Federal executive branch should be in this area. Ultimately, the President decided not to proceed with the Natural Resources reorganization. That decision influenced other potential shifts that might have occurred. In the interim, and in the foreseeable future, we in the Department of Agriculture are pleased to continue to work cooperatively

on agriculture with our colleagues in the Department of Interior and Commerce. We think we have established a good rapport across the Departments through the Joint Subcommittee on Aquaculture. We are confident that we can achieve efficiencies, avoid overlapping programs, and work effectively in the absence of reorganization.

Mr. WAMPLER. Dr. Cutler, do you feel we should have a single Federal agency to promote fish as a major food source? Do you perceive of the Department of Agriculture as being the lead agency in this regard?

Mr. CUTLER. As you noted earlier, title XIV provides that the Department of Agriculture will be the lead agency in aquaculture. However, I believe the implication primarily concerned freshwater aquaculture.

There are so many complex and interrelated programs that affect marine life. If you examine NOAA's area of responsibility and that of the Department of Interior, you find that they both support fisheries programs. Their relationship to freshwater aquaculture is equally obvious.

Regardless of how many times we reorganize, there will probably always be some overlapping of responsibilities that will call for a coordinated program.

I do not think the other two Departments feel concern that the Department of Agriculture was identified as the lead Department for freshwater aquaculture from the standpoint of providing food resource. As Mr. Wallace just indicated, the Department of Commerce apparently has no objection to USDA handling the insurance coverage on the aquaculture industry, or with our expanded work in the area of financial assistance to the aquaculture industry, or without expanded work through cooperative research and extension at the land grant universities on aquaculture. We believe that we can continue to provide a coordinated program that has three departments working on aquaculture rather than one.

Mr. WAMPLER. I think it was Dr. Shell who alluded in his statement to the fact that he felt—and I believe these are his words, "Given a suitable economic and regulatory environment that aquaculture could grow quite rapidly in this country."

I do not mean this to be unjust criticism of the Fish and Wildlife Service of the Department of the Interior. It has been my observation that their thinking frequently is oriented toward conservation and preservation and not to production of food. These are the types of things that have concerned me because economic statistics, I think, speak for themselves. Here we are importing over \$2 billion worth of fish and fish products a year which is contributing adversely to our deficit and our balance of payments and is depriving a potential source of income for many in this country, including fish farmers, as we use that term in its broadest sense.

It seems to me that we have not yet developed an effective protocol or policy that would permit us to overcome this deficit and also to help us become less dependent on foreign sources for this very vital food.

Therefore, I would hope that we could find a better way to do it so that we could devote the resources available perhaps along the line that was suggested by Dr. Shell, using an existing system to our land

grant colleges and universities to supply whatever data and technology we are able to develop so it can be implemented.

Mr. CUTLER. The national aquaculture plan, which will be completed this year, will spell out these responsibilities and give a sharper focus to the roles of each of us in that area.

Mr. WAMPLER. I would assume, then, that you feel you would like to—and I would like the opinion of others if it isn't a bit premature—have the Congress not try to spell out a national policy until we have the advantage and benefit of this study which is now being developed, as I understand it. It will be available in about a year. Is that the testimony, or thereabouts?

Mr. WALLACE. We are hoping to have the study available before the end of this calendar year.

We are having a major review of the draft which we are in the process of working on right now. This will be early in September.

Following that there will be a review from the academia and the industry and everyone else, and we would hope to then do some final redrafting so that the plan would then be made available to the Congress and the public before the end of the year.

Mr. WAMPLER. It would probably be better, that is, the Congress would be better advised to have the benefit of that study before we declare a policy. Isn't that right?

Mr. WALLACE. If the Congress is going to have a bill along the lines that have been proposed by Dr. Cutler, and which we endorse, that is, a simple bill which would enunciate some of these policies, then I do not believe it is necessary to wait for this study because that would then be the basis for effectuating such a policy statement by the Congress itself.

Mr. WAMPLER. Mr. Wallace, do you feel there should be one agency of the Federal Government that has the clear responsibility as the lead agency in the encouragement and production of fish as a major source of food?

Mr. WALLACE. We have not thought that was necessary. We feel that we have considerable expertise and capability in the marine area in relation to research and development—and I am talking about economic development now.

Certainly, the Department of Agriculture has similar expertise in freshwater, and in working with fish farmers. It seems to me that they have the paramount capability to carry out freshwater fish farming programs insofar as the Government's requirements are necessary.

We believe that together we can do this on a cooperative basis. It really does not make too much difference whether it is all in one agency or in several pieces, so long as coordination exists. That is what we are trying to do in the joint subcommittee.

Mr. WAMPLER. As I understood the testimony, there was a difference of opinion between Dr. Clark and Dr. Shell as to how effective the Federal participation has been. I suppose it depends on what the experience of an individual has been. Dr. Clark indicated that the University of California at Davis had more direct dealing with the programs of the Department of Commerce. I think probably what Dr. Shell is saying was that he felt that with the modest input from the Department of Agriculture they could achieve the same thing in freshwater fish farming.

Mr. CUTLER. Let me respond with respect to the University of California's decisions on expenditure of formula funds for cooperative research and cooperative extension. It is beyond the ability of USDA in Washington to determine exactly how administrators of the Experiment Station and the Cooperative Extension Service in California spend the formula money they receive under the Hatch and Smith-Lever appropriations. State directors set their own priorities based on their estimation of the priorities.

As part of our new effort under the Joint Council on Food and Agricultural Sciences provided for in title XIV of the 1977 farm bill, we are working to develop a closer rapport with State administrators, including some joint and coordinated program and budget planning, so that we are more confident of how the formula funds will be spent. We can more confidently tell you how funds will be spent in connection with our in-house research and education programs.

It is incumbent upon the people concerned about aquaculture and mariculture in California and other States that they make their case successfully with the appropriate administrators at the universities if more money from the Hatch and Smith-Lever programs should be spent on aquaculture.

Incidentally, when I was on faculty of Michigan State University, I served for a while as the marine advisory services program leader. My salary was paid in part by the Department of Agriculture's Smith-Lever moneys and in part by the Department of Commerce Sea Grant money. I can testify from personal experience that good coordination can be effected between those two departments at the university level.

Mr. WAMPLER. Dr. Cutler, I appreciate what you are saying. I do not mean to be facetious when I say this, but considering the level of appropriations requested by the Department of Agriculture in this administration to fund the traditional Hatch programs and under Smith-Lever, I do not think the administrator will have too much trouble about where they are going to spend the limited amount of money they have. I think, we in the Congress have not responded as we should have. We did pass the Department of Agriculture appropriation bill in the House of Representatives yesterday.

The Committee on Appropriations and the House of Representatives did restore some of the cuts, but as you well know, being an administrator, that with the effect of inflation and the ever-increasing costs, we are falling further and further behind every year in this vital function. There are many areas that we need to address ourselves to in what I think has been a model Federal, State, and local partnership, particularly through our land grant colleges and universities.

While I have no fault with allocating resources in the general field of aquaculture, it deprives us and robs us of other areas of concern and need considering what I perceive to be the pitifully low level of appropriations.

So, again, I hope that the Congress and this administration, and succeeding administrations, will put the priority on this type of research because I think it would pay dividends handsomely for all the American people in making us as self-sufficient in the production of all types of food as we possibly can.

Here is a great resource that could be tapped, and I think we have not even scratched the surface yet.

Thank you, Mr. Chairman.

Mr. CUTLER. I believe the Office of Science and Technology policy, that is, Dr. Frank Press and his staff, have identified aquaculture as an area that they want to give more priority and attention to as we move into the 1981 budget. I am optimistic that we will bring forward a more adequate budget in this area for 1981.

Mr. WAMPLER. Dr. Cutler, you will have my support in that regard. I think you will have the support of most members of this committee if that is done.

Mr. WALLACE. I would like to make one further comment to clarify something having to do with the activities of the Department of Commerce in terms of aquaculture.

I am not sure how clear it is, but we do have a very close working relationship with a substantial part of the academic community through the national sea grant program. This is a program which involves not only teaching and extension or advisory services, but also research.

One of the things that puzzled me a little in Dr. Shell's statement was his absence of emphasis on scientific research. We in Commerce believe that in marine aquaculture, at least, we are far away from doing a lot of things in aquaculture. The basic research must be done, and we must do it before we can really have a successful aquaculture program, no matter what the economic conditions might be.

Who is going to do this? I think there is a Federal role in doing some of this scientific research. There is also a role for the academic community and the industry. We believe that in the marine area, at least, research has to be a component of this development.

This does not mean to say that we do not believe that there is potential for development even now, but for many areas there is a way in which we can utilize these resources and that will have to be based upon a sound data base and scientific facts.

Mr. WAMPLER. Dr. Shell, would you like to respond to that?

Mr. SHELL. I agree with Mr. Wallace, that you have to have research. I think our fundamental difference would be where it will be done and who is going to do it. I happen to believe that 75 to 80 percent of the research should be done in support and answering problems that fish farmers have.

Mr. Wallace's point is that there are no fish farmers in the mariculture area, so you do not know what their problems are. To try to anticipate what their problems are going to be is a rathole. You can pour an unbelievable amount of money down that hole.

I can see the need for some preliminary source of research, but to try to anticipate problems that do not exist reminds me of the old Steve Allen show several years ago, when they said, "OK, here is the answer. You decide what the question is."

I have no problem in knowing that we need research. The problem is when do you start putting money into it—assuming you know what the problems are.

That is our basic difference of opinion. A Federal Government tends to get in on the front end of this and assume that they know what the problems are. They have been mistaken in times past. The track record is pretty good, I guess, but not all that encouraging.

Therefore, I think in this case we need this. I have said before that one of the main things we need in aquaculture is about 10 years of some neglect on the part of publicizing the future. The jury is still out on what we are going to do in mariculture in this country. There is strong competition for land, for capital, and for labor. In the coastal areas it is going to be a very difficult situation to handle. But to anticipate now what those problems are going to be is also a very difficult thing to do.

Mr. JONES of Tennessee [acting chairman]. Mr. de la Garza had to leave to attend another meeting at this time.

We thank you all for your presence and excellent testimony. That concludes our testimony today. The subcommittees will stand adjourned subject to the call of the Chair.

[Whereupon at 11:45 a.m., the subcommittees were adjourned.]

[The material referred to and additional material submitted to the subcommittees follow:]

96TH CONGRESS
1ST SESSION

H. R. 20

To provide for the development of aquaculture in the United States, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 15, 1979

Mr. MURPHY of New York (for himself, Mr. BREAUX, and Mr. FORSYTHE) introduced the following bill; which was referred to the Committee on Merchant Marine and Fisheries

A BILL

To provide for the development of aquaculture in the United States, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That this Act may be cited as the "National Aquaculture Act
4 of 1979".

5 SEC. 2. FINDINGS, PURPOSE, AND POLICY.

6 (a) FINDINGS.—Congress finds the following:

7 (1) The harvest of certain species of fish and
8 shellfish has exceeded levels of optimum sustainable

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1 yield, thereby making it more difficult to meet the in-
2 creasing demand for seafood.

3 (2) To satisfy its extensive market for seafood, the
4 United States imports more than 50 percent of its fish
5 and shellfish, but this dependence on imports adversely
6 affects the national balance of payments and contrib-
7 utes to the uncertainty of supplies.

8 (3) Although aquaculture currently contributes ap-
9 proximately 10 percent of world seafood production,
10 less than 3 percent of current United States seafood
11 production results from aquaculture. Domestic aquacul-
12 tural production, therefore, has the potential for signifi-
13 cant growth.

14 (4) Aquacultural production of aquatic plants can
15 provide sources of food, industrial materials, pharma-
16 ceuticals, and energy, and can assist in the control and
17 abatement of pollution.

18 (5) The rehabilitation and enhancement of fish and
19 shellfish resources are desirable applications of aqua-
20 cultural technology.

21 (6) The principal responsibility for the develop-
22 ment of aquaculture in the United States must rest
23 with the private sector.

24 (7) Despite its potential, the development of aqua-
25 culture in the United States has been inhibited by

1 many economic, legal, and production factors such as
2 inadequate credit, diffused legal jurisdiction, the lack of
3 management information, and the lack of reliable sup-
4 plies of seed stock.

5 (8) Many areas of the United States are suitable
6 for aquaculture, but are subject to land-use or water-
7 use management policies that may inhibit the develop-
8 ment of aquaculture. These policies should be reviewed
9 and modified so that aquaculture will be considered
10 along with the other possible uses of such areas.

11 PURPOSE.—It is the purpose of this Act to promote
12 aquaculture in the United States by—

13 (1) declaring a national policy for aquaculture;

14 (2) establishing and implementing a national aqua-
15 culture development plan; and

16 (3) developing programs and encouraging activi-
17 ties in both the public and private sectors of the econo-
18 my;

19 that will result in increased aquacultural production, the co-
20 ordination of domestic aquacultural efforts, the conservation
21 and enhancement of aquatic resources, the creation of new
22 industries and job opportunities, and other national benefits.

23 (c) POLICY.—Congress declares that aquaculture has
24 the potential for augmenting existing commercial and recre-
25 ational fisheries and for producing other renewable resources,

1 thereby assisting the United States in meeting its future food
2 needs and contributing to the solution of world resource prob-
3 lems. It is, therefore, in the national interest, and it is the
4 national policy, to encourage the development of aquaculture
5 in the United States.

6 **SEC. 3. DEFINITIONS.**

7 As used in this Act, unless the context otherwise re-
8 quires—

9 (1) The term “aquaculture” means the propaga-
10 tion and rearing of aquatic species in controlled or se-
11 lected environments, including, but not limited to,
12 ocean ranching (except private ocean ranching of
13 Pacific salmon for profit in those States where such
14 ranching is prohibited by law).

15 (2) The term “aquaculture facility” means any
16 land, structure, or other appurtenance that is used for
17 aquaculture and is located in any State. Such term in-
18 cludes, but is not limited to, any laboratory, hatchery,
19 rearing pond, raceway, pen, incubator, or other equip-
20 ment used in aquaculture.

21 (3) The term “aquatic species” means any species
22 of finfish, mollusk, crustacean, or other aquatic inverte-
23 brate, amphibian, reptile, or aquatic plant.

24 (4) The term “Fund” means the Federal Aquacul-
25 ture Assistance Fund established by section 11.

1 (5) The term "person" means any individual who
2 is a citizen or national of the United States, any Indian
3 tribe, any institution of higher education, and any cor-
4 poration, partnership, association or other entity (in-
5 cluding, but not limited to, any community develop-
6 ment corporation, producer cooperative, or fishermen's
7 cooperative) organized or existing under the laws of
8 any State.

9 (6) The term "Plan" means the National Aqua-
10 culture Development Plan required to be established
11 under section 4.

12 (7) The term "Secretary" means the Secretary of
13 Commerce.

14 (8) The term "State" means any of the several
15 States, the District of Columbia, the Commonwealth of
16 Puerto Rico, American Samoa, the Virgin Islands of
17 the United States, Guam, the Commonwealth of the
18 Northern Mariana Islands, the Trust Territory of the
19 Pacific Islands, and any other commonwealth, terri-
20 tory, or possession of the United States.

21 **SEC. 4. NATIONAL AQUACULTURE DEVELOPMENT PLAN.**

22 (a) **IN GENERAL.**—(1) Within 18 months after the date
23 of the enactment of this Act, the Secretary by regulation
24 shall establish the National Aquaculture Development Plan.
25 Within 6 months after such date of enactment and before

6

1 developing proposed regulations with respect to the Plan, the
2 Secretary shall give interested persons an opportunity to par-
3 ticipate in the development of the Plan by holding public
4 hearings at regional locations that the Secretary deems ap-
5 propriate taking into account—

6 (A) the geographical proximity of States to one
7 another,

8 (B) the similarity of States in aquacultural activi-
9 ties and potential, and

10 (C) other relevant factors.

11 (2) In developing the Plan, and revisions thereto under
12 subsection (d), the Secretary shall consult with the Secretary
13 of Agriculture, the Secretary of the Interior, other appropri-
14 ate Federal officers, appropriate States, and appropriate Re-
15 gional Fishery Management Councils established under sec-
16 tion 302 of the Fishery Conservation and Management Act of
17 1976 (16 U.S.C. 1852).

18 (3) If the Secretary deems it to be appropriate, the Sec-
19 retary may, after consultation with the Secretary of Agricul-
20 ture and the Secretary of the Interior, establish, and appoint
21 the members of, an advisory committee to assist in the initial
22 development of the Plan. Individuals appointed to the advi-
23 sory committee shall be knowledgeable and experienced in
24 the principles and practices of aquaculture. The members of
25 the advisory committee (other than officers or employees of

1 the Federal Government), while away from their homes or
2 regular places of business in the performance of services for
3 the advisory committee, shall be allowed travel expenses, in-
4 cluding per diem in lieu of subsistence, in the same manner
5 as persons employed intermittently in the Government serv-
6 ice are allowed expenses under section 5703 of title 5 of the
7 United States Code.

8 (b) CONTENTS OF PLAN.—The Plan shall consist of the
9 following programs:

10 (1) With respect to each aquatic species that the
11 Secretary determines to have significant potential for
12 culturing on a commercial or other basis, a program
13 (which may include, but is not limited to, research and
14 development, technical assistance, demonstration, ex-
15 tension education, and training activities) that the Sec-
16 retary determines to be necessary to achieve such po-
17 tential. The program shall relate to such of the follow-
18 ing matters as may be appropriate, taking into account
19 the status of aquaculture regarding the aquatic species
20 concerned:

21 (A) Aquaculture facility design and oper-
22 ation.

23 (B) Water quality management.

24 (C) Use of waste products (including thermal
25 effluents).

1 (D) Nutrition and the developing of economi-
2 cal feeds, including natural food sources.

3 (E) Life history, genetics, physiology, pathol-
4 ogy, and disease control (including research re-
5 garding organisms that may not be harmful to fish
6 and shellfish but are injurious to humans).

7 (F) Processing and market development.

8 (G) Production management and quality con-
9 trol.

10 (H) The development of adequate supplies of
11 seed stock.

12 (2) Research programs on the effect of aquacul-
13 ture on estuarine and other water areas and on the
14 management of such areas for aquaculture.

15 (3) Programs to analyze, and to formulate pro-
16 posed resolutions of, the legal or regulatory constraints
17 that may affect aquaculture.

18 (4) Such other research and development, techni-
19 cal assistance, demonstration, extension education, and
20 training programs as the Secretary deems necessary or
21 appropriate to carry out the purpose and policy of this
22 Act.

23 In formulating any program for inclusion in the Plan, and in
24 reviewing any program under subsection (d), the Secretary
25 shall, to the extent practicable, take into account any signifi-

1 cant action that (i) has been, or is proposed to be, undertaken
2 by any other Federal department or agency, any State
3 agency, or any person; and (ii) may affect the accomplish-
4 ment of the program.

5 (c) ACTIONS AND IMPLEMENTATION.—The Plan shall
6 specify—

7 (1) with respect to each program included within
8 the Plan pursuant to subsection (b), those actions that
9 the Secretary determines should be undertaken, and
10 the period of time within which each such action
11 should be completed, in order to implement the pro-
12 gram; and

13 (2) with respect to each action referred to in para-
14 graph (1), that the Secretary, the Secretary of Agricul-
15 ture, or the Secretary of the Interior, acting individual-
16 ly, jointly, or collectively, has responsibility for imple-
17 menting the action.

18 The specifications of Secretarial responsibilities under para-
19 graph (2) for implementing actions shall be determined by the
20 Secretary on the basis of—

21 (A) the responsibilities conferred on the respective
22 Secretaries by law or by any executive action having
23 the effect of law (including, but not limited to, Reorga-
24 nization Plan Numbered 4 of 1970); and

1 (B) the experience, expertise, and other appropri-
2 ate resources that the department of each such Secre-
3 tary may have with respect to the action required
4 under the program concerned.

5 (d) REVISION OF PLAN.—The Secretary shall under-
6 take periodic reviews of the operation and effectiveness of the
7 Plan. If as a result of any such review, or the aquacultural
8 assessment required under subsection (e), the Secretary de-
9 termines that—

10 (1) any aquatic species not currently identified in
11 the Plan has significant potential for aquaculture;

12 (2) any program or action specified in the Plan is
13 not being accomplished on a successful and timely
14 basis; or

15 (3) any program or action specified in the Plan
16 should be terminated because its objectives have been
17 achieved or its projected benefits do not warrant fur-
18 ther support;

19 the Secretary by regulation shall appropriately amend the
20 Plan.

21 (e) CONTINUING AQUACULTURE ASSESSMENT.—The
22 Secretary shall undertake a continuing assessment of aqua-
23 culture in the United States for the purpose of maintaining,
24 on a continuing basis—

1 (1) a complete profile of the aquacultural industry
2 with respect to the incidence, size, and status of com-
3 mercial aquacultural enterprises;

4 (2) the identification of private and public institu-
5 tions and organizations involved in aquacultural re-
6 search, extension, credit, and market development;

7 (3) the identification of the various aquatic species
8 being cultured and a description of the status of com-
9 mercial development of each such species;

10 (4) to the extent practicable, the identification of
11 aquacultural production regions, species, and markets
12 that have significant potential for development;

13 (5) a catalog describing all Federal programs and
14 activities that directly or indirectly encourage, support,
15 or assist aquaculture; and

16 (6) the identification of the economic, physical,
17 and social constraints that inhibit the development of
18 aquaculture in the United States.

19 Within 6 months after the date of the enactment of this Act,
20 the Secretary shall complete an initial assessment for pur-
21 poses of carrying out this subsection. In developing the Plan,
22 the Secretary shall take into account the information ob-
23 tained as a result of such initial assessment.

1 **SEC. 5. FUNCTIONS AND POWERS OF SECRETARIES.**

2 (a) **MANDATORY FUNCTIONS.**—In implementing any
3 program under the Plan, the Secretary, the Secretary of Ag-
4 riculture, or the Secretary of the Interior, as the case may
5 be, shall—

6 (1) provide advisory, educational, and technical
7 assistance (including training) with respect to aquacul-
8 ture to interested persons, but in providing such assist-
9 ance, shall, to the maximum extent practicable, avoid
10 duplication of similar assistance provided by other Fed-
11 eral departments and agencies and by State agencies;

12 (2) consult and cooperate with interested persons,
13 Federal departments and agencies, State agencies, and
14 regional commissions;

15 (3) encourage the implementation of aquacultural
16 technology in the rehabilitation and enhancement of
17 publicly owned fish and shellfish stocks (including such
18 rehabilitation and enhancement by private nonprofit en-
19 terprises), and in the development of private commer-
20 cial aquacultural enterprises; and

21 (4) prescribe such regulations as may be necessary
22 to carry out such a program.

23 (b) **DISCRETIONARY FUNCTIONS.**—In implementing
24 any program under the Plan, the Secretary, the Secretary of
25 Agriculture, or the Secretary of the Interior, as the case may
26 be, may—

1 (1) for the purposes of assessing the biological and
2 economic feasibility of any aquacultural system—

3 (A) conduct tests of the system and, if neces-
4 sary, construct, operate, and maintain develop-
5 mental aquaculture facilities, including, but not
6 limited to, production-scale facilities, for testing
7 laboratory results, and

8 (B) conduct such other tests or analyses as
9 may be necessary;

10 (2) produce, and sell at cost, seed stock for aquat-
11 ic species when privately produced seed stock is un-
12 available, unreliable, or insufficient in quantity to meet
13 production or research needs;

14 (3) develop methods to enhance stocks of aquatic
15 species; and

16 (4) conduct such other tests or analyses or take
17 such other actions as such Secretary deems necessary
18 or appropriate.

19 (c) INFORMATION SERVICES.—(1) In addition to per-
20 forming such other functions that are required under this Act,
21 the Secretary shall—

22 (A) establish and maintain an information service
23 for the collection, analysis, and dissemination of scien-
24 tific, technical, legal, and economic information relating
25 to aquaculture;

1 (B) conduct appropriate surveys, in coordination
2 with other Federal departments and agencies, of public
3 and private aquacultural activities being conducted in
4 the United States for the purpose of acquiring informa-
5 tion on acreages, water use, production, culture tech-
6 niques, and other relevant matters;

7 (C) arrange with foreign nations for the exchange
8 of information relating to aquaculture;

9 (D) conduct a continuing study to determine
10 whether existing capture fisheries could be adversely
11 affected by competition from products produced by
12 commercial aquacultural enterprises and include in
13 such study—

14 (i) an assessment of any such adverse effect,
15 by species and by geographical region, on such
16 fisheries, and

17 (ii) recommended measures to ameliorate any
18 such effect; and

19 (E) report to Congress on the findings made under
20 the study provided for under subparagraph (D) in the
21 biennial status report required under subsection (d).

22 (2) Any production information submitted to the Secre-
23 tary under paragraph (1)(B) shall be confidential and may
24 only be disclosed if required under court order. The Secretary
25 shall by regulation prescribe such procedures as may be nec-

1 essary to preserve such confidentiality, except that the Secre-
2 tary may release or make public any such information in any
3 aggregate or summary form that does not directly or indirect-
4 ly disclose the identity, business transactions, or trade secrets
5 of any person who submits such information.

6 (d) BIENNIAL REPORT.—The Secretary shall prepare
7 on a biennial basis, and submit to Congress, a report on the
8 status of aquaculture in the United States. Each such report
9 shall contain a description and evaluation of the actions un-
10 dertaken with respect to the Plan during the reporting
11 period, an explanation of any revisions made to the Plan
12 under section 4(d) during the reporting period, and such other
13 comments and recommendations regarding aquaculture in the
14 United States as the Secretary deems appropriate. The first
15 report required under this subsection shall be submitted to
16 Congress by September 30, 1981.

17 (e) ACCEPTANCE OF GIFTS, BEQUESTS, ETC.—(1) The
18 Secretary, the Secretary of Agriculture, and the Secretary of
19 the Interior may each accept any gift, temporary donation, or
20 devise or bequest of real or personal property, or the pro-
21 ceeds from the sale or other disposition of such property or
22 interests therein, for use in performing any function that such
23 Secretary may have under this Act. Any such acceptance
24 may be subject to the terms of any restrictive or affirmative
25 covenant, or condition of servitude, if such terms are deemed

1 by the Secretary concerned to be in accordance with law and
2 compatible with the purpose for which acceptance is sought.

3 (2) Gifts and bequests of money, and the proceeds from
4 the sale of other property received as a gift or bequest under
5 this subsection, shall be deposited in a separate account in
6 the Treasury of the United States and shall be disbursed
7 upon the order of the Secretary concerned.

8 SEC. 6. COORDINATION OF NATIONAL ACTIVITIES REGARD-
9 ING AQUACULTURE.

10 (a) ESTABLISHMENT.—There is established the Inter-
11 agency Aquaculture Coordinating Committee (hereafter in
12 this section referred to as the “Committee”) that shall be
13 composed of the following members or their designees:

14 (1) The Secretary, who shall be the Chairman of
15 the Committee.

16 (2) The Secretary of Agriculture.

17 (3) The Secretary of the Interior.

18 (4) The Secretary of Energy.

19 (5) The Administrator of the Environmental Pro-
20 tection Agency.

21 (6) The Chief of Engineers.

22 (7) The Commissioner of Food and Drugs.

23 (8) The Administrator of the Small Business Ad-
24 ministration.

1 (9) The Governor of the Farm Credit Administra-
2 tion.

3 (b) **FUNCTIONS.**—The functions of the Committee shall
4 be—

5 (1) to ensure that there is a continuing exchange
6 of information among Federal departments and agen-
7 cies with respect to the nature and status of the pro-
8 grams or projects being conducted by such agencies
9 that relate, or that may relate, to aquaculture or to the
10 implementation of the Plan; and

11 (2) to review on a continuing basis the relevant
12 programs and projects of all Federal departments and
13 agencies to determine whether such programs and proj-
14 ects are being conducted in compliance with subsection
15 (c).

16 (c) **FEDERAL CONSISTENCY.**—Each Federal depart-
17 ment and agency that has functions or responsibilities with
18 respect to aquaculture or has jurisdiction over any activity
19 that affects, or that may affect, the achievement of the pur-
20 pose and policy of this Act, shall, in consultation with the
21 Committee and to the maximum extent practicable, perform
22 such function, responsibility, or activity in a manner that is
23 consistent with the purpose and policy of this Act.

1 SEC. 7. CONTRACTS AND GRANTS.

2 (a) IN GENERAL.—The Secretary, the Secretary of Ag-
3 riculture, and the Secretary of the Interior may each carry
4 out any program that such Secretary is responsible for imple-
5 menting under the Plan through grants to, or contracts with,
6 any person, any other Federal department or agency, any
7 State agency, or any regional commission.

8 (b) TERMS AND CONDITIONS.—Any contract entered
9 into, or any grant made, under subsection (a) shall contain
10 such terms and conditions as the Secretary concerned shall
11 by regulation prescribe as being necessary or appropriate to
12 protect the interests of the United States, except that no such
13 contract may be entered into, and no such grant may be
14 made, for any purpose which is in violation of any applicable
15 State or local law.

16 (c) LIMITATION.—The amount of any grant made under
17 subsection (a) may not exceed an amount equal to one-half
18 the estimated cost of the project for which the grant is made.

19 (d) AUDIT.—Each recipient of a grant or contract under
20 this section shall make available to the Secretary concerned
21 and to the Comptroller General of the United States, for pur-
22 poses of audit and examination, any book, document, paper,
23 and record that is pertinent to the funds received under such
24 grant or contract.

1 **SEC. 8. AQUACULTURAL DEMONSTRATION PROJECTS.**

2 (a) **DEFINITION.**—As used in this section, the term
3 “demonstration project” means any project that demon-
4 strates, in a practical manner, the use, application, design,
5 construction, or operation of procedures, techniques, equip-
6 ment, or facilities that are useful and beneficial to aquacul-
7 tural producers.

8 (b) **IN GENERAL.**—In order to further the development
9 of aquaculture, the Secretary, the Secretary of Agriculture,
10 and the Secretary of the Interior may each provide financial
11 assistance under this section.

12 (c) **FINANCIAL ASSISTANCE.**—The financial assistance
13 provided under this section shall be in the form of grants in
14 an amount not to exceed 50 percent of the estimated cost of
15 any demonstration project.

16 (d) **APPLICATIONS FOR FINANCIAL ASSISTANCE.**—
17 Application for financial assistance under this section may be
18 made by any person (including, but not limited to, any State
19 agency and any regional commission) to the Secretary con-
20 cerned in such form and manner as such Secretary shall pre-
21 scribe. In providing financial assistance under this section,
22 the Secretary concerned shall take into consideration wheth-
23 er similar projects are being implemented under Federal,
24 State, or private auspices.

25 (e) **TERMS AND CONDITIONS.**—Financial assistance
26 shall be provided under this section to each recipient under

1 such terms and conditions as the Secretary concerned deems
2 to be necessary or appropriate to carry out this section, in-
3 cluding, but not limited to, conditions—

4 (1) relating to the disposition by the recipient of
5 products resulting from the demonstration project and
6 of the proceeds resulting from any sale of such prod-
7 ucts; and

8 (2) requiring the recipient—

9 (A) if applicable, to provide tours of the proj-
10 ect for aquacultural producers and other interested
11 groups and individuals and, upon request, provide
12 such groups and individuals with information con-
13 cerning the project, and

14 (B) to compile on an annual basis a report
15 setting forth the income, cost, operating difficul-
16 ties, and producer interest with respect to the
17 project and to submit the report to the Secretary
18 concerned along with the recommendation for
19 project modifications that the recipient deems ad-
20 visable.

21 (f) INFORMATION DISSEMINATION.—The results ob-
22 tained from each demonstration project assisted under this
23 section shall be disseminated through the State cooperative
24 extension services, the Sea Grant Marine Advisory Program,

1 and such other systems as the Secretary concerned deems
2 appropriate.

3 **SEC. 9. GUARANTEES OF OBLIGATIONS ISSUED FOR AQUA-**
4 **CULTURE FACILITIES.**

5 (a) **IN GENERAL.**—(1) The Secretary may, subject to
6 the provisions of this section, guarantee, or make a commit-
7 ment to guarantee, the payment of interest on, and the prin-
8 cipal amount of, any obligation issued by an obligor for any of
9 the following purposes:

10 (A) The financing of the construction, reconstruc-
11 tion, or reconditioning of any aquaculture facility (in-
12 cluding the financing of the purchase cost of any aqua-
13 culture facility to be reconstructed or reconditioned),
14 except that no obligation may be guaranteed under this
15 section later than 2 years after the date of the comple-
16 tion of the construction, reconstruction, or recondition-
17 ing of the aquaculture facility involved.

18 (B) The acquisition of stocks of aquatic species for
19 any aquaculture facility.

20 (C) The financing of the initial operating expenses
21 of any aquaculture facility.

22 (D) The financing of marketing operations exclu-
23 sively for aquacultural products.

24 (E) The refinancing of any existing obligation
25 issued for any of the purposes specified in subpara-

1 graph (A), (B), (C), or (D) of this paragraph, whether
2 or not guaranteed under this section, including, but not
3 limited to, any short-term obligation incurred for the
4 purpose of obtaining temporary funds for refinancing.

5 Guarantees and commitments to guarantee may be made
6 under this section without regard to section 3679(a) of the
7 Revised Statutes of the United States (31 U.S.C. 665 (a)).

8 (2) The Secretary may not guarantee more than 90 per-
9 cent of the principal of, and the interest on, any obligation
10 under this section.

11 (3) The full faith and credit of the United States is
12 pledged to the payment of all guarantees made under this
13 section with respect to both principal and interest, including
14 any interest, if provided for in the guarantee, that may
15 accrue between the date of default under a guaranteed obli-
16 gation and the payment in full of the guarantee.

17 (4) Any guarantee, or commitment to guarantee, made
18 by the Secretary under this section shall be conclusive evi-
19 dence of the eligibility of the obligation for such guarantee,
20 and the validity of any guarantee, or commitment of guaran-
21 tee, so made shall be incontestable.

22 (5) The aggregate unpaid principal amount of all obliga-
23 tions outstanding at any one time and guaranteed under this
24 section—may not exceed \$150,000,000.

1 (b) CONDITIONS.—(1) Obligations guaranteed under this
2 section—

3 (A) shall have an obligor approved by the Secre-
4 tary as being responsible and possessing the ability, ex-
5 perience, financial resources, and other qualifications
6 necessary for the adequate operation and maintenance
7 of the aquaculture facilities;

8 (B) shall have maturity dates satisfactory to the
9 Secretary, but not to exceed 25 years;

10 (C) shall provide for payments by the obligor sat-
11 isfactory to the Secretary; and

12 (D) shall bear interest (exclusive of charges for
13 the guarantee and service charges, if any) at rates not
14 to exceed such annual percentage on the unpaid princi-
15 pal as the Secretary determines to be reasonable,
16 taking into account the range of interest rates prevail-
17 ing in the private market for similar loans and the risks
18 assumed by the Secretary.

19 (2) The Secretary, in guaranteeing any obligation under
20 this section, shall give preference to any person with 40 or
21 fewer employees who, together with such person's affiliates,
22 is primarily engaged in the business of aquaculture or com-
23 mercial harvesting or gathering of aquatic species.

24 (3) No obligation may be guaranteed under this section
25 unless the obligor conveys or agrees to convey to the Secre-

1 tary such security interest as the Secretary may reasonably
2 require to protect the interests of the United States.

3 (c) FEES.—(1) The Secretary may charge a fee for any
4 obligation guaranteed under this section, the amount of which
5 shall be established by the Secretary by regulation not to
6 exceed one-half of 1 percent per annum of the outstanding
7 principal balance of the obligation. Fee payments shall be
8 made by the obligor to the Secretary when moneys are first
9 advanced under a guaranteed obligation and at least 60 days
10 before each anniversary date thereafter.

11 (2) The Secretary shall charge and collect from the obli-
12 gor such amounts as the Secretary may deem reasonable for
13 the investigation of the application for any guarantee, for the
14 appraisal of properties offered as security for any guarantee,
15 and for the inspection of such properties during construction,
16 reconstruction, or reconditioning, except that such charges
17 shall not aggregate more than one-half of 1 percent of the
18 original principal amount of the obligation to be guaranteed.

19 (3) All fees and other amounts received by the Secretary
20 under the provisions of this subsection shall be deposited in
21 the fund.

22 (4) Obligations guaranteed under this section, and
23 agreements relating thereto, shall contain such other provi-
24 sions with respect to the protection of the security interests
25 of the United States (including acceleration and subrogation

1 provisions and the issuance of notes by the obligor to the
2 Secretary), liens and releases of liens, payments of taxes, and
3 such other matters as the Secretary may prescribe.

4 (d) **DEFAULT.**—(1) In the event of a default, which has
5 continued for 90 days, in any payment by the obligor of prin-
6 cipal or interest due under any obligation guaranteed under
7 this section, the obligee or the obligee's agent shall have the
8 right to demand, at or before the expiration of such period as
9 may be specified in the guarantee or related agreements, but
10 not later than 180 days from the date of such default, pay-
11 ment by the Secretary of the unpaid principal amount of said
12 obligation. Within such period as may be specified in the
13 guarantee or related agreements, but not later than 60 days
14 from the date of such demand, the Secretary shall promptly
15 pay to the obligee or his agent the unpaid principal amount of
16 the obligation and unpaid interest thereon to the date of pay-
17 ment; except that the Secretary shall not be required to make
18 such payment if before the expiration of such period the Sec-
19 retary finds that there has been no default by the obligor in
20 the payment of principal or interest or that such default has
21 been remedied before any such demand.

22 (2) Payments required to be made by the Secretary
23 under paragraph (1) shall be made by the Secretary from the
24 Fund.

1 (3) In the event of any payment by the Secretary under
2 paragraph (1), the Secretary shall have all rights in any secu-
3 rity held by the Secretary relating to the Secretary's guaran-
4 tee of such obligations as are conferred upon the Secretary
5 under any security agreement with the obligor. Notwith-
6 standing any other provision of law relating to the acquisi-
7 tion, handling, or disposal of property by the United States,
8 the Secretary may, under such terms and conditions as the
9 Secretary prescribes or approves, complete, recondition, re-
10 construct, renovate, repair, maintain, operate, or sell any
11 property acquired by the Secretary pursuant to a security
12 agreement with the obligor.

13 (4) After any default referred to in paragraph (1), the
14 Secretary shall take such action against the obligor or any
15 other party liable thereunder that the Secretary deems neces-
16 sary or appropriate to protect the interests of the United
17 States. Any suit may be brought in the name of the United
18 States or in the name of the obligee and the obligee shall
19 make available to the United States all records and evidence
20 necessary to prosecute any such suit. The Secretary may
21 accept a conveyance of title to and possession of property
22 from the obligor or other parties liable to the Secretary and
23 may purchase the property for an amount not greater than
24 the unpaid principal amount of such obligation and interest
25 thereon. In the event the Secretary receives through the sale

1 of property an amount of cash in excess of any payment made
2 to an obligee under paragraph (1) and the expenses of collec-
3 tion of such amounts, the Secretary shall pay such excess to
4 the obligor.

5 (5) Whoever, for the purpose of obtaining any loan or
6 advance of credit from any person with the intent that an
7 obligation relating to such loan or advance of credit shall be
8 offered to or accepted by the Secretary to be guaranteed, or
9 for the purpose of obtaining any extension or renewal of any
10 loan, advance of credit, or mortgage relating to an obligation
11 guaranteed by the Secretary, or the acceptance, release, or
12 substitution of any security on such loan or advance of credit,
13 or for the purpose of influencing in any way the action of the
14 Secretary under this section, makes, passes, utters, or pub-
15 lishes, or causes to be made, passed, uttered, or published
16 any statement knowing the same to be false, or alters, forges,
17 or counterfeits, or causes or procures to be altered, forged, or
18 counterfeited, any instrument, paper, or document, or utters,
19 publishes, or passes as true, or causes to be uttered, pub-
20 lished, or passed as true, any instrument, paper, or docu-
21 ment, knowing it to have been altered, forged, or counter-
22 feited, or willfully overvalues any security, asset, or income
23 shall be punished by a fine of not more than \$5,000, or by
24 imprisonment for not more than 2 years, or both.

1 (e) The Secretary shall promulgate such rules and regu-
2 lations as are deemed necessary or appropriate to carry out
3 this section.

4 (f) For purposes of this section—

5 (1) The term “construction”, “reconstruction”, or
6 “reconditioning” includes, but is not limited to, design-
7 ing, inspecting, outfitting, and equipping of the aqua-
8 culture facility involved.

9 (2) The term “obligation” means any note, bond,
10 debenture, or other evidence of indebtedness issued for
11 one of the purposes specified in subsection (a).

12 (3) The term “obligee” means the holder of any
13 obligation.

14 (4) The term “obligor” means any person primar-
15 ily liable for payment of the principal of or interest on
16 any obligation.

17 **SEC. 10. INSURANCE AGAINST CERTAIN LOSSES INCURRED**
18 **IN AQUACULTURE FACILITY OPERATIONS.**

19 (a) **DEFINITIONS.**—As used in this section, unless the
20 context otherwise requires—

21 (1) The term “direct insurance” means any insur-
22 ance described in paragraphs (2), (3), and (4).

23 (2) The term “essential liability insurance” means
24 insurance against all sums that the owner of an aqua-
25 culture facility is legally obligated to pay as damages

1 because of bodily injury or property damage caused by
2 the aquaculture facility, the operation of such facility,
3 or the aquatic species cultured at such facility.

4 (3) The term "essential property insurance"
5 means insurance against direct loss of, or direct
6 damage to, the real or personal property of an aquacul-
7 ture facility caused by perils, as they are defined and
8 limited in standard fire policies and extended coverage
9 endorsements thereon as approved by the State insur-
10 ance authority, and insurance against loss of, or
11 damage to, the real or personal property of an aquacul-
12 ture facility from such perils as the Secretary by regu-
13 lation shall specify, including, but not limited to, van-
14 dalism, malicious mischief, burglary, and theft.

15 (4) The term "essential stock insurance" means
16 insurance against loss of, or damage to, any aquatic
17 species being cultured at an aquaculture facility due to
18 unavoidable or natural causes, including, but not lim-
19 ited to, drought, pollution, hail, frost, wind, winterkill,
20 freeze, lightning, fire, excessive rain, flood, snow, wild-
21 life, hurricane, tornado, insect or parasitic infestation,
22 disease, and such other unavoidable or natural causes
23 as the Secretary by regulation shall specify.

24 (5) The term "insurer" includes any insurance
25 company or group of companies under common owner-

1 ship that is authorized to engage in the insurance busi-
2 ness under the laws of any State.

3 (6) The term "owner" means any person having
4 an insurable interest in an aquaculture facility or
5 aquatic species stock.

6 (7) The term "pool" means any pool or associ-
7 ation of insurers in any State that is formed, associ-
8 ated, or otherwise created for the purpose of making
9 insurance more readily available.

10 (8) The term "reasonable premium rate" means
11 that premium rate determined by the Secretary, which
12 would permit the purchase of any direct insurance cov-
13 erage by a reasonably prudent person in similar cir-
14 cumstances with due regard to the costs and benefits
15 involved.

16 The Secretary may by regulation define any technical or
17 trade term necessary in the administration of this section,
18 insofar as any such definition is not inconsistent with the pro-
19 visions of this section.

20 (b) INSURANCE STUDY.—The Secretary shall conduct,
21 within 18 months after the date of the enactment of this Act,
22 and annually thereafter, a study to determine whether direct
23 insurance is available to owners at reasonable premium rates
24 through insurers, pools, or a suitable program adopted under
25 State law.

1 (c) **DIRECT INSURANCE.**—(1)(A) If the study conducted
2 under subsection (b) indicates that essential property insur-
3 ance or essential liability insurance is not available at reason-
4 able premium rates in any State and such insurance has not
5 been provided by State action, the Secretary may establish a
6 program to provide such insurance in such State, if the Sec-
7 retary considers the issuance of such insurance necessary and
8 appropriate to carry out the purpose and policy of this Act.

9 (B) Any essential property insurance or essential liabil-
10 ity insurance issued by the Secretary under this paragraph
11 shall be subject to such terms and conditions, and to such
12 deductibles and other restrictions and limitations, as the Sec-
13 retary deems appropriate, except that the Secretary may not
14 provide essential property insurance or essential liability in-
15 surance with respect to—

16 (i) any aquaculture facility or stock of aquatic spe-
17 cies that the Secretary determines to be uninsurable
18 due to the failure of the owner to follow established
19 principles for operating aquaculture facilities or cultur-
20 ing aquatic species, as the case may be; or

21 (ii) any aquaculture facility that the Secretary de-
22 termines to lack reasonable protective measures to pre-
23 vent loss or damage.

24 (2)(A) If the study conducted under subsection (b) indi-
25 cates that essential stock insurance is not available at reason-

1 able premium rates in any State and that such insurance has
2 not been provided by State action, the Secretary shall estab-
3 lish a program to provide such insurance in such State.

4 (B) Any essential stock insurance issued by the Secre-
5 tary under this paragraph shall be subject to such terms, con-
6 ditions, deductibles, and other restrictions and limitations as
7 the Secretary deems appropriate, except that the Secretary
8 may not provide essential stock insurance with respect to any
9 stock of aquatic species that the Secretary determines to be
10 uninsurable due to the failure of the owner to follow estab-
11 lished principles for culturing aquatic species or due to the
12 lack of reasonable protective measures at the aquaculture fa-
13 cility concerned to prevent the loss of, or damage to, the
14 stock being cultured.

15 (d) PREMIUM RATES.—(1) In determining the premium
16 rate for any direct insurance offered under subsection (c) (1)
17 or (2), the Secretary shall consult with persons knowledge-
18 able and experienced in insurance, including, but not limited
19 to, State insurance regulatory authorities, and may take into
20 consideration with respect to the insurance concerned, the
21 nature and degree of risk involved, the protective devices em-
22 ployed, the extent of past and anticipated losses, the prevail-
23 ing rate for similar coverages, the economic importance of
24 the insurance, and the relative abilities of the particular

1 classes and types of insureds to pay the actual premium for
2 such coverage.

3 (2)(A) The Secretary may not establish the premium
4 rate for any direct insurance at less than 60 percent of the
5 actual premium rate for such insurance.

6 (B) For purposes of subparagraph (A), the actual pre-
7 mium rate for any direct insurance offered under this section
8 shall be determined as follows:

9 (i) If insurance of the same kind is offered by in-
10 surers or pools in the State concerned, the actual pre-
11 mium rate shall be the median premium rate for all
12 such insurance so offered, as determined by the
13 Secretary.

14 (ii) If insurance of the same kind is not offered by
15 insurers or pools in the State concerned, the actual
16 premium rate shall be the rate, as determined by the
17 Secretary, at which insurers or pools in such State
18 would offer such insurance, taking into account actu-
19 arially sound principles applicable to the elements
20 making up such rate, including, but not limited to,
21 claim losses, general administrative expenses, acquisi-
22 tion expenses, taxes, license fees, and profits.

23 In making determinations under clauses (i) and (ii) the Secre-
24 tary shall consult with the insurance regulatory authority of

1 the State concerned and any rate advisory organization li-
2 censed by such State.

3 (3) Nothing in this section shall be construed to prohibit
4 or require either the adoption of uniform national rates or the
5 periodic modification of the currently estimated reasonable
6 premium rates for any particular coverage, class, State, or
7 risk on the basis of additional information or actual loss expe-
8 rience.

9 (e) REINSURANCE.—(1) The Secretary may enter into
10 any contract, agreement, treaty, or other arrangement with
11 any insurer or pool to provide reinsurance coverage with re-
12 spect to any direct insurance issued by such insurer or pool,
13 in consideration of payment of such premiums, fees, or other
14 charges by insurers or pools that the Secretary deems to be
15 appropriate, after consultation with persons knowledgeable
16 and experienced in insurance.

17 (2) Reinsurance issued under this subsection shall reim-
18 burse an insurer or pool for its total proved and approved
19 claims for covered losses resulting from providing the direct
20 insurance concerned during the term of the reinsurance con-
21 tract, agreement, treaty, or other arrangement, over and
22 above the amount of the insurer's or pool's retention of such
23 losses, as provided in such reinsurance, contract, agreement,
24 treaty, or other arrangement entered into under this section.

1 (3) Such contracts, agreements, treaties, or other ar-
2 rangements may be made without regard to section 3679(a)
3 of the Revised Statutes of the United States (31 U.S.C.
4 665(a)), and shall include any terms and conditions that the
5 Secretary deems necessary to carry out the purposes of this
6 section. The premium rates and terms and conditions of such
7 contracts, agreements, treaties, or other arrangements with
8 an insurer or pool shall be uniform in any one year through-
9 out the country.

10 (f) ADMINISTRATIVE PROVISIONS.—(1) All premiums
11 received by the Secretary under this section shall be depos-
12 ited into the Fund.

13 (2) The Secretary, in a suit brought in the appropriate
14 United States district court, shall be entitled to recover from
15 any owner, insurer, or pool the amount of any unpaid pre-
16 mium lawfully payable to the Secretary by such owner, in-
17 surer, or pool under any direct insurance or reinsurance
18 issued under this section.

19 (3) No action or proceeding shall be brought for the re-
20 covery of any premium due the Secretary, or for the recovery
21 of any premium paid to the Secretary in excess of the amount
22 due, unless such action or proceeding is commenced within 5
23 years after the right accrued for which the claim is made;
24 except that, if the insurer has made or filed with the Secre-
25 tary a false or fraudulent statement or other document with

1 intent to evade, in whole or in part, the payment of premi-
2 ums, the claim shall not be deemed to have accrued until its
3 discovery by the Secretary.

4 (g) **CONTRACTS.**—In order to provide for maximum effi-
5 ciency in the administration of the insurance and reinsurance
6 program provided under this section, and in order to facilitate
7 the expeditious payment of any claims under such program,
8 the Secretary may enter into contracts with any insurer,
9 pool, or person, for the purpose of providing for the perform-
10 ance of any of the following functions:

11 (1) The estimation or determination of any
12 amounts of payments for reinsurance or direct insur-
13 ance claims.

14 (2) The receipt, disbursement, and accounting for
15 funds in making payments for reinsurance and direct
16 insurance claims.

17 (3) The auditing of the records of any insurer,
18 pool, or person to the extent necessary to assure that
19 proper payments are made.

20 (4) The establishment of the basis of liability for
21 reinsurance or direct insurance payments, including the
22 total amount of proved and approved claims that may
23 be payable to any insurer, pool, or owner, and the
24 total amount of premiums earned by any insurer or

1 pool in the respective States from direct insurance or
2 reinsurance.

3 (5) The provision of assistance in any manner pro-
4 vided for in the contract to further the purposes of this
5 section.

6 (h) **USE OF OTHER FEDERAL EMPLOYEES, SERVICES,**
7 **ETC.**—The Secretary may, with the consent of the agency
8 concerned, accept and use, on a reimbursable basis, the offi-
9 cers, employees, services, facilities, and information of any
10 Federal department or agency with respect to any insurance
11 matter that is within the purview of this section.

12 (i) **REGULATIONS.**—The Secretary may prescribe regu-
13 lations establishing the general method or methods by which
14 proved and approved claims for losses are paid under any
15 direct insurance or reinsurance issued under this section.
16 Proved and approved claims shall be paid from the Fund.

17 (j) **PAYMENT OF CLAIMS.**—The Secretary, in providing
18 any direct insurance or reinsurance under this section may
19 adjust and pay all claims for proved and approved losses cov-
20 ered by such insurance and, upon the disallowance by the
21 Secretary, or upon the refusal of the claimant to accept the
22 amount allowed upon any such claim, the claimant, within
23 one year after the date of mailing of notice of disallowance or
24 partial disallowance of the claim, may institute an action on
25 such claim against the Secretary in the United States district

1 court for the district in which the insured owner or reinsured
2 insurer or pool resides or principally conducts business, and
3 jurisdiction is hereby conferred upon such court to hear and
4 determine such action without regard to the amount in con-
5 troversy.

6 (k) **LIMITATIONS.**—The face amount of direct insurance
7 and reinsurance coverage outstanding and in force at one
8 time and issued under this section may not exceed
9 \$125,000,000.

10 (l) **TERMINATION.**—No direct insurance or reinsurance
11 may be issued by the Secretary under this section after Sep-
12 tember 30, 1982.

13 **SEC. 11. FEDERAL AQUACULTURE ASSISTANCE FUND.**

14 (a) **ESTABLISHMENT.**—There is established in the
15 Treasury of the United States a Federal Aquaculture Assist-
16 ance Fund. The Fund shall be available to the Secretary as a
17 revolving fund for the purpose of carrying out, and adminis-
18 tering, sections 9 and 10. The Fund shall consist of—

- 19 (1) any sums appropriated to the Fund;
20 (2) any fees received by the Secretary in connec-
21 tion with any guarantee made under section 9;
22 (3) recoveries and receipts received by the Secre-
23 tary under security, subrogation, and other rights and
24 authorities under section 9;

1 (4) premiums paid to, or recovered by, the Secre-
2 tary for any direct insurance or reinsurance issued by
3 the Secretary under section 10; and

4 (5) moneys deposited pursuant to the last sentence
5 of subsection (b).

6 All payments made by the Secretary to carry out the provi-
7 sions of sections 9 and 10 (including reimbursements to other
8 government accounts) shall be paid from the Fund only to the
9 extent provided in appropriation Acts. Sums in the Fund that
10 are not currently needed for the purposes of sections 9 and
11 10 shall be kept on deposit or invested in obligations of or
12 guaranteed by the United States.

13 (b) **TREASURY BORROWING.**—If at any time the
14 moneys in the Fund are not sufficient to pay any amount the
15 Secretary is obligated to pay under section 9 or any direct
16 insurance or reinsurance claim under section 10, the Secre-
17 tary shall issue to the Secretary of the Treasury notes or
18 other obligations (only to such extent and in such amounts as
19 may be provided for in appropriation Acts) in such forms and
20 denominations, bearing such maturities, and subject to such
21 terms and conditions as the Secretary of the Treasury pre-
22 scribes. Such notes or other obligations shall bear interest at
23 a rate determined by the Secretary of the Treasury, taking
24 into consideration the current average market yield on out-
25 standing marketable obligations of the United States of com-

1 parable maturities during the month preceding the issuance
2 of such notes or other obligations. The Secretary of the
3 Treasury shall purchase any notes and other obligations to be
4 issued under this subsection, and for such purpose the Secre-
5 tary may use as a public debt transaction the proceeds from
6 the sale of any securities issued under the Second Liberty
7 Bond Act, and the purposes for which securities may be
8 issued under that Act, are extended to include any purchases
9 of such notes and obligations. The Secretary of the Treasury
10 at any time may sell any of the notes or other obligations
11 acquired by the Secretary of the Treasury under this subsec-
12 tion. All redemptions, purchases, and sales by the Secretary
13 of the Treasury of such notes or other obligations shall be
14 treated as public debt transactions of the United States.
15 Moneys borrowed under this subsection shall be deposited in
16 the Fund and redemptions of such notes and obligations shall
17 be made by the Secretary from the Fund.

18 **SEC. 12. AUTHORIZATION FOR APPROPRIATIONS.**

19 (a) **OTHER THAN TO FUND.**—For purposes of carrying
20 out the provisions of this Act (other than sections 9 and 10),
21 there are authorized to be appropriated—

22 (1) to the Department of Commerce, not to
23 exceed

24 (A) \$11,000,000 for fiscal year 1980, and

1 (B) \$14,000,000 for each of fiscal years
2 1981 and 1982;

3 (2) to the Department of Agriculture, not to
4 exceed

5 (A) \$3,000,000 for fiscal year 1980, and

6 (B) \$5,000,000 for each of fiscal years 1981
7 and 1982; and

8 (3) to the Department of the Interior, not to
9 exceed

10 (A) \$3,000,000 for fiscal year 1980, and

11 (B) \$5,000,000 for each of fiscal years 1981
12 and 1982.

13 (b) TO FUND.—Commencing with fiscal year 1980,
14 there are authorized to be appropriated, without fiscal year
15 limitation, to the Fund such sums as may be necessary and
16 appropriate for purposes of carrying out sections 9 and 10.

17 **SEC. 13. DISCLAIMER.**

18 Nothing in this Act shall be construed to amend, repeal,
19 or otherwise modify the authority of any Federal officer or
20 any Federal department or agency to perform any function,
21 responsibility, or activity authorized under any other provi-
22 sion of law.

DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20250

June 19 1979

Honorable Thomas S. Foley
Chairman, Committee on Agriculture
House of Representatives
Washington, D. C. 20515

Dear Mr. Chairman:

This is in reply to your request of May 29, for a report on H.R. 20, a bill "To provide for the development of aquaculture in the United States, and for other purposes."

The Department of Agriculture opposes enactment of this bill.

The bill provides for a national program designed to promote aquaculture development which will result in increased sources of protein for human consumption. It also provides for developing, improving, or maintaining fishery resources for both recreational and commercial purposes as well as stimulating aquaculture related business, industry, and employment.

The bill authorizes the Secretary of Commerce to establish a National Aquaculture Development Plan which would identify aquaculture needs and implement a program to promote aquaculture development. The plan would be developed in consultation with the Secretaries of Interior and Agriculture, who would also assist the Secretary of Commerce in implementing the program. The bill provides for disaster loans and direct insurance to aquaculturists and authorizes appropriations for fiscal years 1980, 1981, and 1982 to the Departments of Commerce, Interior, and Agriculture for carrying out the provisions of this bill.

The Department opposes this legislation because authority currently exists within the Executive Branch to accomplish the primary purposes of this bill. The Department of Agriculture has historically exercised its authority in providing services to fish farmers as it has to those involved with other farming enterprises. The Department's interest in aquaculture is supported by the enactment of the Food and Agriculture Act of 1977 (PL 95-113) which gave the Department a lead role in supporting food and agricultural sciences including aquaculture. The Department of Agriculture has been instrumental in helping freshwater fish farming achieve its current success. A summary of the USDA past and ongoing efforts in aquaculture is included in an enclosure.

Honorable Thomas S. Foley

The Department of Agriculture believes the production of fish and other aquatic species under controlled conditions for commercial purposes in privately-owned or -operated ponds is an agricultural enterprise. This enterprise is directly comparable in scope, effect, and result to other time-honored agricultural enterprises such as the raising of livestock or crops. The Department of Agriculture has the staff, experience, and organization to carry out the necessary support services and linkages at State and county levels for fresh water aquaculture in such farm-owned and operated ponds.

Title XIV, the "National Agricultural Research, Extension and Teaching Policy Act of 1977" of the "Food and Agricultural Act of 1977" (PL 95-113), authorized the Department of Agriculture to expand its aquaculture support programs. Title XIV (Sec. 1405) states, "The Department of Agriculture is designated as the lead agency of the Federal Government for agricultural research....extension, and teaching in the food and agricultural sciences"... Section 1404 defines "food and agricultural sciences" to mean sciences related to food and agriculture in the broadest sense, including the social, economic, and political considerations of ...aquaculture.... Title XV of PL 95-113 also includes aquaculture, in addition to agriculture, rural development, and human nutrition, as a basic function of the Department (Sec. 1502(a)). Title XV of PL 95-113 includes loan authority for aquacultural purposes as a function of the Department by amending title III of the Bankhead-Jones Farm Tenant Act and subtitle A of the Consolidated Farm and Rural Development Act (Sec. 1503).

Since 1976, USDA has increased its emphasis on fresh water aquaculture to give it a higher profile within the Department. A USDA interagency work group was established in January 1976 composed of personnel from 11 USDA agencies. The work group has been active since its inception to make the Department responsive to and involved with the aquaculture industry. A USDA Aquaculture Coordinator was hired in February 1978 to provide leadership, coordinate aquaculture activities, and develop plans and procedures which would enable the Department to give appropriate consideration to the needs of aquaculture. In October of 1978, the Secretary reaffirmed that the Department will develop a viable aquaculture program and requested that each USDA agency assess present programs, inventory authorities, and identify opportunities for new and expanded programs in aquaculture.

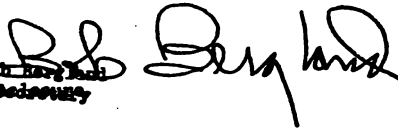
Honorable Thomas S. Foley

The USDA is an active member of the Joint Subcommittee on Aquaculture, an interagency group committed to increasing the effectiveness of the overall federal effort in aquaculture. Through this mechanism we are working with the other major federal agencies involved with aquaculture to: (1) Better define the areas of responsibility of each agency with respect to aquaculture research, development, transfer, and assistance program; (2) Develop an Aquaculture National Plan; (3) Obtain definitive information on possible financial and regulatory constraints to commercial aquaculture; and (4) Determine the need for new aquaculture legislation.

In view of these activities, we strongly oppose H.R. 20 in its present form but would not object to relatively simple legislation to enhance aquaculture in the United States that declares a strong national policy and formalizes actions we have taken to develop a national plan for aquaculture and defines the relative roles of the various Federal agencies.

The Office of Management and Budget has advised that there is no objection to the presentation of this report from the standpoint of the Administration.

Sincerely,


 Bob Berglund
 Director

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

JUN 19 1979

Honorable Thomas S. Foley
Chairman, Committee on Agriculture
U.S. House of Representatives
Washington, D. C. 20515

Dear Mr. Chairman:

This responds to your request for our views on H.R. 20, a bill
"To provide for the development of aquaculture in the United States,
and for other purposes."

We strongly recommend against the enactment of this legislation. We,
however, would have no objection to a simple bill which would state
an aquaculture policy, call for a national aquaculture plan, and
reaffirm the existing organizational coordination mechanisms.

H.R. 20 directs the Secretary of Commerce to make an assessment of
aquaculture in the United States and, in consultation with the Secretaries
of the Interior and Agriculture, to prepare a National Aquaculture
Development Plan within 18 months of enactment. The plan is to identify
aquatic species which can be cultured on a commercial or other basis,
and for each species so identified, set forth a program of necessary
research, development, technical assistance, education, demonstration,
and training activities, identify the research needed on the effect
of aquaculture in estuarine and other waters, and analyze the legal
and regulatory constraints on the industry. The plan is to specify a
timetable, and assign responsibility for implementation, to the
Departments of Commerce, Interior, or Agriculture as appropriate. The
Secretaries are authorized to use grants and contracts to carry out
any program and specifically, to provide financial assistance for
aquaculture demonstration projects in the form of grants not to exceed
50 percent of the estimated cost. The bill authorizes appropriations
to the Department of Commerce to carry out these duties in the amount
of \$11 million for fiscal year 1980 and \$14 million for each fiscal
year 1981 and 1982, and to the Departments of the Interior and Agriculture
each, \$3 million in fiscal year 1980 and \$5 million per year in fiscal
years 1981 and 1982.

This legislation also empowers the Secretary of Commerce to guarantee
loans for aquaculture facilities up to a total of \$150 million. In
addition, if after an 18 month study, the Secretary of Commerce finds
that essential property and liability insurance for aquaculture ventures
is not available at reasonable rates, she is empowered to establish an

insurance program. The face value of this insurance would be limited to \$125 million. A Federal Aquaculture Assistance Fund is set up in the U.S. Treasury to carry out the loan guarantee and insurance provisions and such funds as may be necessary are authorized to be appropriated, beginning with fiscal year 1980.

Finally, H.R. 20 creates the Interagency Aquaculture Coordinating Committee, chaired by the Secretary of Commerce with a membership roster including the Secretary of the Interior. The Committee is to assure a continual exchange of information among Federal agencies involved in aquaculture activities.

While we recognize the importance of aquaculture, the need for efficient and appropriate programs to support this, and an assessment of the aquaculture industry, many of the actions required by H.R. 20 are already underway. Since the first authorization for two fish hatcheries in 1872, aquaculture has been a prime function of the U.S. Fish and Wildlife Service. The National Fish Hatchery System has grown to 89 installations producing over 40 species of fish. In 1975, the National Fish Hatchery System produced 268 million fish and fish eggs weighing over 5 million pounds; the effort was equally divided between warm water and cold water species in terms of numbers of fish produced. Each hatchery also demonstrates to fish farmers and the general public the most up-to-date, tried and tested techniques in fish culture as well as fundamental concepts in biology and conservation. In addition, five Service development centers carry out basic and applied research to solve production problems found at the hatcheries. These centers are presently working in the areas of environmental control, pollution abatement, diet formulation, quality control, production methods and equipment, and training (workshops and short courses).

At 10 locations across the country, the National Fish Hatchery System has approximately 20 hatchery biologists who function as fish disease and fish husbandry specialists for Service and State problems. In addition, there are two aquaculture schools which offer advanced training which is not available elsewhere in the country. While these schools primarily train Service personnel, they are open to State, private and foreign personnel.

The Fish and Wildlife Service has nine research laboratories which actively support the aquaculture effort. Two disease laboratories and two nutrition laboratories have received international recognition. The Service also has two Fish Farming Experimental Stations which are completely oriented to development of freshwater aquaculture practices. The vast majority of the research necessary to obtain Food and Drug Administration approval of chemical compounds used in aquaculture is performed at the fish control laboratory. The fish pesticide laboratory researches aquaculture problems associated with pesticides. In addition,

the Service is constructing another research laboratory to investigate the propagation of sport and food fishes indigenous to the Eastern United States.

In cooperation with State universities and conservation agencies, the Fish and Wildlife Service operates 25 Cooperative Fishery Units. Over 50 percent of these units conduct investigations concerning various aspects of aquaculture. In addition, a number of Indian tribes, particularly in the Northwest, have with our assistance engaged in aquaculture development in recent years and we expect these programs will become active business enterprises. The Fish and Wildlife Service has demonstrated its capabilities in the technical research, development and production of finfish, and continues its existing efforts in finfish nutrition, fish health, genetics, drug and chemicals clearance, and environmental/water quality problems.

The Office of Management and Budget has advised that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,



David Hales

Acting ~~Assistant~~ SECRETARY

ATTACHMENT TO
Statement of M. Rupert Cutler
Assistant Secretary for Conservation, Research and Education
U.S. Department of Agriculture
before the
Committee on Agriculture
Subcommittee on Conservation and Credit
and the
Subcommittee on Department, Investigations, Oversight, and Research
U.S. House of Representatives

June 20, 1979

The following is the detailed explanation of the U.S. Department of Agriculture's role in aquaculture.

Soil Conservation Service (SCS)

With field offices in nearly all counties in the United States, the Soil Conservation Service is able to work directly with land owners and operators whose desires and farm resources indicate a satisfactory opportunity for some aspect of aquaculture.

The Soil Conservation Service assists the would-be aquaculturist to assess the potential of his resources for growing and marketing his product and to match his resources with the right kind of enterprise.

Assessment of resources includes: (1) water quality (field testing), (2) water quantity, (3) soils information, (4) market potential (general), (5) human resources, and (6) financial resources.

The small percentage of survivors of this initial resource appraisal (estimated to be less than five percent) then are given detailed assistance in developing a resource conservation plan considering: (1) water quality (monitoring and laboratory), (2) water quality (monitoring and measuring), (3) cost-return analysis (break-even point), (4) fish habitat management, (5) specific soils information, (6) site limitations (physical), and (7) design and layout. Where FmHA financing is involved, the Soil Conservation Service may be requested to inspect construction as it proceeds.

Soil Conservation Service technicians usually do not aid in day-to-day management of the operating facilities. They do occasionally assess specific problems that may develop such as oxygen deficiencies and bank erosion and provide fish farmers new research results and results of experience gained by others. The diagnosis and treatment of diseases are referred to other agencies or private consultants for assistance with those problems.

In addition, the Resource Conservation and Development (RC&D) Program provides opportunities for local units of government and nonprofit organizations to participate in aquaculture. Three avenues are available. The first is through authorities relating to public water-based fish and wildlife development which could provide for participation on some aspect of aquaculture. The second avenue is the conducting of studies focusing on such aquaculture items as inventorying and evaluating opportunities and marketing surveys. The third avenue is through utilizing RC&D loan authorities which include "the conservation, development, and utilization of water for aquacultural purposes" (Public Law 95-113).

A major reduction is proposed for RC&D in the FY 1980 Budget since reviews of RC&D have been unable to demonstrate statistically significant economic progress towards program objectives, RC&D is proposed to be phased out in FY 1981.

In fiscal year 1977, the Soil Conservation Service provided technical assistance with fish management on 37,923 ponds and 4,442 acres of commercial fish ponds.

SCIENCE AND EDUCATION ADMINISTRATION-EXTENSION SEA-E)

The Science and Education Administration-Extension (SEA-E), as the educational arm of the Department of Agriculture, is charged under the Smith-Lever Act "to aid in the diffusing among the people of the United States useful and practical information on subjects relating to agriculture, uses of solar energy with respect to agriculture, and home economics, and to encourage the application of the same." The Act further provides that "this work shall be carried out in such a manner as may be mutually agreed upon by the Secretary of Agriculture and the State agricultural college or colleges... receiving the benefits of this Act."

Thus, using research information provided by the State Experiment Stations and other research agencies, SEA-E, through State cooperative extension services has been actively engaged in fish pond management in 26 States; and added programs on marine resource education, the commercial fish industry, and the Sea Grant Program. In the freshwater area, activities include: fish bait production (17 States), catfish farming (15 States), and trout farming (5 States). A demonstration project was initiated in 1976 by the Texas SEA-E to evaluate catfish production as a supplemental source of food and income for small and low income farmers. One State, Louisiana, has an intensive crawfish production program.

Activities have been expanded in the marine areas since SEA-E negotiated a memorandum of understanding with the Sea Grant Program. In 20 States, SEA-E is carrying out education programs under mutual agreement.

Recently, SEA-E personnel have been conducting educational programs on economics and management of aquatic animal harvesting, processing, storage, and marketing.

SCIENCE AND EDUCATION ADMINISTRATION-COOPERATIVE RESEARCH (SEA-CR)

The Science and Education Administration-Cooperative Research (SEA-CR) financially supports research on freshwater aquaculture at the State Agricultural Experiment Stations of Land-Grant Colleges. This involves research projects having

a total scientific manpower input of about 20 scientist-years. The combined total effort on all aquaculture projects at these State institutions is about 50 scientists-years.

Research is being conducted on several major aspects of freshwater aquaculture, including the breeding of aquaculture species for more efficient growth and more uniformity of product at harvesting; nutritional studies to define requirements for more efficient production of the various species; cultural methods for optimum production, such as water temperature and quality, stocking rates, harvesting methodology, raceway culture, and other practices for optimum production. Methods of disease and parasite control to reduce losses are being studies. Processing and marketing studies are in progress to improve product quality and nutritional value, product acceptability, and greater efficiency in processing and marketing aquaculture products.

The SEA-CR funds also support a Regional Research Project (S-83) entitled, "Freshwater Food Animals." Through this project, scientists can exchange unpublished research information, jointly plan future research activities, and avoid duplication of research. Nine State institutions and several Federal agencies (TVA, USDI, USDC, and USDA) participate in the project.

SCIENCE AND EDUCATION ADMINISTRATION-AGRICULTURAL RESEARCH SEA-AR)

The Science and Education Administration-Agricultural Research (SEA-AR) currently conducts some research directly related to aquaculture; it is largely restricted to terrestrial food production or agriculture.

The SEA-AR does conduct research indirectly related to aquaculture. Such areas include the prevention of water quality degradation by pesticides, animal waste, and sedimentation from agricultural operations. The thrust, however, is not directed specifically or exclusively to aquacultural production.

FARMERS HOME ADMINISTRATION (FmHA)

The Farmers Home Administration (FmHA) of the U.S. Department of Agriculture channels credit to farmers, rural residents, and communities. It attempts to help borrowers gain maximum benefit from loans through counseling and technical assistance.

Some loan programs are strictly for individuals and their families. Some involve associations of people. Other loans are made to partnerships, cooperatives, corporations, or public bodies. FmHA employees work in concert with all types of borrowers as well as with State and local officials, planning groups, and Government agencies.

The agency's loan authorities provide a supplemental source of credit, augmenting the efforts of the private lenders rather than competing with them. Most FmHA programs require that a borrower "graduate" to commercial credit when able to do so.

Major purposes of FmHA's rural credit programs include:

1. To help build the family farm system, the economic and social base of many rural communities.
2. To expand business and industry, increase income and employment, and control or abate pollution.
3. To install water and waste disposal systems and other community facilities that will help rural areas upgrade the quality of living and promote economic development and growth.
4. To provide or improve modest homes in suitable rural environments at prices and on terms that families of low or moderate income can afford.

Most of the loan programs fall into two categories:

GUARANTEED LOANS, in which the loan is made and serviced by a private lender. FmHA guarantees to limit any loss to a specified percentage. Interest rates are determined between borrower and lender except farm emergency loans where the interest rate is established by law.

INSURED LOANS, that are originated, made, and serviced by the personnel of the agency. The notes evidencing the loans are sold backed by the full faith of the Government, and the sales proceeds replenish revolving loan funds. For most programs, interest rates to borrowers are determined by the current cost of Federal borrowing.

Statutory Authorities and Present Programs

FmHA administers several loan programs that can provide credit to aquaculture operators. These programs and the authorities for them are as follows:

1. Emergency Loans (EM): EM loans are made in counties where property damage or severe production losses have occurred as a result of a natural disaster, or has been made eligible for Federal assistance by a major or emergency declaration by the President.

EM loans are made to eligible established farmers, ranchers and aquaculture operators doing business as individuals, cooperatives, corporations, or partnerships, for losses, major adjustments, operating expenses, and other essential needs arising from disasters so that they may continue their operations.

EM loans are authorized by Subtitle C of the Consolidated Farm and Rural Development Act. Section 321 of the Act provides, "For the purposes of this subtitle 'aquaculture' means husbandry of aquatic organisms under a controlled or selected environment."

2. Economic Emergency Loan (EE): EE loans are made to bona fide farmers or ranchers doing business as individuals, cooperatives, corporations, or partnerships, who are suffering economic hardships because of a general lack of farm credit. EE loans are available when farm credit is hard to get because of national or areawide economic stresses, such as a general tightening of agricultural credit or situations such as high production cost and low prices for farm goods. EE loans can be made to help eligible farmers and ranchers continue their normal operations during a temporary economic emergency.

EE loans are authorized by the Emergency Agricultural Credit Adjustment Act of 1978. Section 202 of the Act provides, "As used in this title, the term 'agricultural production' shall include aquaculture...."

FaHA's EE loan regulations provide: "Aquaculture. The husbandry of aquatic organisms by an applicant or borrower under a controlled or selected environment. Aquaculture operators are considered to be farming operations. Aquatic organisms may consist of any species of finfish, mollusk, or crustacean (or other invertebrate), amphibian, reptile, or aquatic plants."

3. Operating Loans (OL): OL loans are made to provide credit and management assistance necessary to family farmers or ranchers doing business as individuals, cooperatives, corporations, or partnerships. A range of family farmers may be eligible for OL loan assistance; however, one objective is to assist limited resource

operators, new operators and low-income operators. OL loans enable family-farm operators to make efficient use of their land (including water), labor, and other resources to improve their living conditions and to improve their economic situations. OL loans can be made for any necessary operating expenses.

OL loans are authorized by the Consolidated Farm and Rural Development Act. Section 343 of the Act provides: "As used in this title (1) the term 'farmer' shall be deemed to include persons who are engaged in, or who, with assistance afforded under this title, intend to engage in, fish farming, (2) the terms 'farming' shall be deemed to include fish farming"

Revised FmHA OL loan regulations issued November 29, 1978, provide :
"Farm, a tract or tracts of land, improvements, and other appurtenances considered to be farm property which is used or will be used in the production of crops or livestock, including the production of fish under controlled conditions, for sale in sufficient quantities so that the property is recognized as a farm rather than a rural residence..."
"Fish, any aquatic gilled animal commonly known as 'fish', as well as mollusks or crustaceans, (or other invertebrates) produced under controlled conditions (that is, feeding, tending, harvesting, and such other activities as are necessary to properly raise and market the product) in ponds, lakes, streams, or similar holding areas."

4. Farm Ownership Loans (FO): FO loans are made to assist eligible farmer applicants, either individuals, cooperatives, corporations, or partnerships to become owner-operators of family farms, to make efficient use of land, labor and other resources, to carry on sound and successful operations on the farm, and to enable farm families to have a reasonable standard of living. Many categories of family farmers are eligible for FO loan assistance. However, one objective is to assist limited resource operators, new operators, and low-income operators. FO loans can be made for the purchase and development of real estate.

FO loans are authorized by the Consolidated Farm and Rural Development Act. Therefore, Section 343 of the Act applies to those loans. (See operating loans above.)

Revised FmHA FO loan regulations issued November 29, 1978, provides:

"Farm, a tract or tracts of land, improvement and other appurtenances considered to be farm property which is used or will be used in the production of crops or livestock. This includes the production of aquatic organisms under a controlled or selected environment owned or operated by the applicant or borrower,...." "Fish farming". The production of fish, mollusks or crustaceans (or other invertebrates under controlled conditions in ponds, lakes, streams, or similar holding areas. This involves feeding, tending, harvesting and other activities as are necessary to properly raise and market the products."

5. Soil and Water Loans (SW): SW loans are made to assist eligible farmer applicants; either individuals, cooperatives, corporation, or partnerships; to encourage and facilitate the improvement, protection, and proper use of farmland by providing financing for soil conservation, water development, conservation, and use; forestation; drainage of farmland; the establishment and improvement of permanent pasture; pollution abatement and control; and other related measures consistent with all Federal, State, and local environmental quality standards. SW loans are authorized by the Consolidated Farm and Rural Development Act. Therefore, Section 343 of the Act applies to these loans. (See operating loans above.)

Revised FmHA SW loan regulations issued November 29, 1978, provide the same definition for "farm" and "fish farming" as do the Farm Ownership Loan regulations (See above).

6. Recreation Loans (RL): RL loans are made to assist eligible farmers or ranchers; either individuals, cooperatives, corporations or partnerships; owners or tenants to convert all or a portion of the farm or ranch they own or operate to outdoor income-producing recreation enterprises, which will supplement or supplant farm or ranch income and permit carrying on sound and successful operations.

RL loans are authorized by the Consolidated Farm and Rural Development Act. Therefore, Section 343 of the Act applies to these loans. (See operating loans above.)

Revised FmHA RL loan regulation issued November 29, 1978, provides the same definition for "farm" and "fish farming" as do the farm ownership loan regulation. (See above.)

7. Business and Industrial Loans (B&I): B&I loans are made to promote development of business and industry, including aquaculture in cities and towns below 50,000 population, but not in larger cities or in areas adjacent to them where population density is more than 100 persons per square mile. Preference is given to applications for projects in open country, rural communities, and towns of 25,000 and smaller. The primary purpose of B&I loans is to create and maintain employment and improve the economic and environmental climate in rural communities.

B&I loans are authorized by Section 310B of Subtitle A of the Consolidated Farm and Rural Development Act. Section 310B (a) of the Act provides for: "...the conservation, development, and utilization of water for aquaculture purposes." And, "As used in this subsection, the term 'aquaculture' means the culture or husbandry of aquatic animals or plants by private industry for commercial purposes including the culture and growing of fish by private industry for the purpose of creating or augmenting publicly owned and regulated stocks of fish."

8. Resource Conservation and Development Loans (RC&D): RC&D loans are made to public agencies and nonprofit corporations in areas that have been designated by the Secretary of Agriculture as resource conservation

and development project areas. These loans may be advanced only after an RC&D project plan, developed by sponsors with guidance by the Soil Conservation Service (SCS), has been accepted by the Secretary of Agriculture, and the Secretary has authorized SCS and other USDA Agencies to help local organizations carry out measures consistent with the plan. RC&D loans help local people meet their share of project costs. RC&D programs to improve the economy of communities in a project area are based on the conservation, development, and use of natural resources.

RC&D loans are authorized by Title III of the Bankhead-Jones Farm Tenant Act. Section 32(e) of the Act states that one of the purposes is to assist in developing "... plans for the conservation, development, and utilization of water for aquaculture purposes;" and it goes on to provide that "as used in this subsection, the term 'aquaculture' means the culture or husbandry of aquatic animals or plants." The RC&D program is proposed to be phased out by the end of FY 1981.

9. Farm Labor Housing (LH) Loans and Grants: LH loans and grants are made to individual farm owners, associations or farmers, State or political subdivisions, or broad-based public or private nonprofit organizations or, nonprofit organizations of farm workers to provide decent, safe, and sanitary housing and related facilities for domestic farm labor. Domestic farm labor includes persons working in aquaculture operations.

ANIMAL AND PLANT HEALTH INSPECTION SERVICE (APHIS)

The Animal and Plant Health Inspection Service (APHIS) consists of Veterinary Services and Plant Protection and Quarantine. Veterinary Services activities in aquaculture are as follows:

1. Provide differential diagnoses of infections and toxicological conditions of fish through our facilities at the Veterinary Services Laboratories, National Animal Disease Center, USDA, Ames, Iowa.
2. Provide consultation of field veterinary epidemiologists, on a request basis, to local officials, and individual fish producers in the areas of infections and toxicological conditions.
3. Administration of the Virus-Serum-Toxin Act of 1973 which pertains to biological products developed for fish. Currently Enteric Redmouth Bacterin and *Vibrio Anguillarum* Bacterin are licensed.

ECONOMIC, STATISTICS, AND COOPERATIVE SERVICE (ESCS)

The Economics, Statistics, and Cooperative Service (ESCS) responds to requests for information relating to the economics of aquaculture. The most active involvement of ESCS has been in conjunction with the Resource Conservation and Development (RCD&D) Program of the U.S. Department of Agriculture. Under that program, ESCS performs economic studies on typical problems encountered in the 1978 RCD&D project areas in the United States. In addition, the National Economic Analysis Division of ESCS has conducted and maintains an interest in marketing studies relating to aquaculture as an element of the U.S. consumer's food purchasing patterns. Although the last published ESCS study relating to the economics of aquaculture was released in May 1973, ESCS maintains an active interest and regularly responds to requests for information on the economics of aquaculture. ESCS is not currently, however, conducting research in the economics of aquaculture.

FARMERS HOME ADMINISTRATION
BUSINESS AND INDUSTRIAL GUARANTEED LOANS
FOR AQUACULTURE AND AQUACULTURE-RELATED ENTERPRISES*

LOANS OBLIGATED OR CLOSED

<u>State</u>	<u>No. of Loans</u>	<u>Amount</u>	<u>Purpose</u>
Alabama	1	\$1,865,000	Preparation of frozen and fresh packaged shrimp
Florida	1	800,000	Catching shellfish
New Jersey	1	750,000	Catching shellfish
North Carolina	1	115,000	Preparation of frozen and fresh packaged fish and seafood
Texas	1	3,780,000	Preparation of frozen and fresh packaged shrimp
Alaska	1	1,542,000	Preparation of frozen and fresh packaged fish and seafood

PREAPPLICATIONS AND APPLICATIONS PENDING APPROVAL

California	1	\$ 750,000	Growing seafood
Hawaii	1	3,000,000	Growing prawns
Louisiana	1	650,000	Packaging and wholesale distribution of seafood
Maine	2	300,000	Preparation of frozen and fresh packaged seafood
Maryland	1	225,000	Catching finfish
		2,000,000	Preparation of frozen and fresh packaged seafood
Montana	1	750,000	Fish farming
North Carolina	1	400,000	Preparation of frozen and fresh packaged seafood
Alaska	3	3,000,000	Preparation of frozen and fresh packaged
		1,850,000	seafood
		7,800,000	" "
			" "
			" "

* NOTES:

(1) Aquaculture loans must meet same regular credit requirements as all B&I loans, there are no separate standards.

(2) B&I regulations were amended to include aquaculture effective 12/78 as a result of the 1977 Agriculture Credit Act of 1977.

FARMERS HOME ADMINISTRATION
Pl... Farming and Aquaculture Loans

	Number	Amount
ALABAMA	7	\$ 420,430
ALASKA	—	—
ARIZONA	0	0
ARIZONA	11	573,370
CALIFORNIA	6	569,320
COLORADO	1	36,000
CONNECTICUT	—	—
DELAWARE	0	0
FLORIDA	50	3,424,270
GEORGIA	4	171,940
HAWAII	—	—
IDaho	2	105,984
ILLINOIS	1	161,000
INDIANA	—	—
IOWA	—	—
KANSAS	—	—
KENTUCKY	7	153,720
LOUISIANA	156	810,000
MAINE	34	670,000
MARYLAND	1	41,860
MASSACHUSETTS	—	—
MICHIGAN	7	353,000
MINNESOTA	2	100,000
MISSISSIPPI	28	5,617,695
MISSOURI	0	0
MISSOURI	5	182,200
NEBRASKA	—	—
NEVADA	—	—
NEW HAMPSHIRE	—	—
NEW JERSEY	2	36,400
NEW MEXICO	—	—
NEW YORK	1	80,000
NORTH CAROLINA	6	254,160
NORTH DAKOTA	—	—
OHIO	1	12,500
OKLAHOMA	15	423,770
OREGON	2	51,000
PENNSYLVANIA	1	45,000
RHODE ISLAND	—	—
SOUTH CAROLINA	—	—
SOUTH DAKOTA	2	43,940
TENNESSEE	—	—
TEXAS	3	137,490
UTAH	3	186,500
VERMONT	—	—
VIRGINIA	1	78,000
WASHINGTON	4	374,800
WEST VIRGINIA	—	—
WISCONSIN	—	—
WYOMING	—	—
PUERTO RICO	—	—
VIRGIN ISLANDS	—	—
U.S. TOTAL	363	15,114,349

These loans were made for production, development and/or disaster related purposes.
 * Farm ownership, Operating, Soil & Water, Emergency & Economic Emergency loans.



DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D. C. 20250

FFB 26 1979

SUBJECT: USDA Aquaculture Coordinator

TO: USDA Assistant Secretaries

Effective February 19, 1979, Mr. Bille Hougart became the USDA Aquaculture Coordinator. In this capacity, he will serve as the Departmentwide leader in all matters relating to aquaculture. He will also be the SEA Program Manager for Aquaculture, reporting to Dr. Keith Shea, Assistant Director for Program Management.

Hougart brings to the Department a broad background in Government affairs, having worked both on Capitol Hill and with the National Academy of Sciences. While at the Academy, he was responsible for the report Aquaculture in the United States - Constraints and Opportunities. He recently served as political strategist for the President's Reorganization Project in Food and Nutrition and as chief analyst in reorganizing Federal activity in aquatic foods for the same project.

Your continuing participation and cooperation with Bille's activities are vital to the development of a viable Departmentwide program in aquaculture. He is located temporarily in the Administration Building (427-W) and his phone number is 447-5121.

Will you please inform appropriate agencies of this new development in aquaculture.

RUPERT HUTTER
Assistant Secretary for
Conservation, Research, & Education

Underwater Food Expert Named

Billie Hougart, a former White House adviser on food and nutrition, has been appointed aquaculture coordinator for USDA. He will also serve as aquaculture program manager for the Science and Education Administration.

Aquaculture is the human-controlled cultivation and harvesting of underwater species (both plants and animals) for food, recreation, home use, or ornamental purposes.

A veteran worker in the aquatic foods area, Hougart will be responsible primarily for directing and overseeing the development of a USDA aquaculture plan, and for coordinating efforts with other federal agencies, Congress, and the industry. Within SEA, Hougart will coordinate current and expanded programs related to aquaculture.

Hougart comes to USDA from the

Executive Office of the President where he was an adviser for the President's reorganization project on food and nutrition.

From 1975 to 1978, Hougart worked for the National Academy of Sciences on national research problems in agriculture and renewable resources. His efforts resulted in reports on climate and food and agriculture production and aquaculture.

Hougart is a former administrator of the National Cotton Council of America, and of Cotton Council International. He has a B.S. degree from American University and a master's degree from the University of Maryland. He is currently working toward a doctorate.

Hougart is a recipient of the National Resources Institute Research Fellowship.



Billie Hougart, former White House adviser on food and nutrition, will direct USDA's underwater plant and food programs and coordinate the Department's efforts with other aquaculture plans nationwide. Hougart is also responsible for managing aquaculture programs within the Science and Education Administration.

Continued from page 3

Formally or informally? Good grammar and sophisticated terminology, or 'Ain't this awful weather?' and a very simple explanation of the survey?

"The variety of the survey is an enjoyable part of this work, too. We don't have time to get bored with one subject and lose interest in the farmers' responses. The ever-changing locations for interviews (not only from county to county but from an elegant living room in front of a warm, cozy fire, to wading through mud and manure to a stripping room or milking parlor the same day) keeps me stimulated and eager to know what's coming next.

"I'm looking forward to many more happy years doing this work."



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Milton Sloane, Editor
Sharon Edwards, Editorial Assistant



DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D. C. 20250

JUL 10 1979

Honorable Thomas S. Foley
Chairman, Committee on Agriculture
House of Representatives
Washington, D. C. 20515

Dear Mr. Chairman:

On October 18, 1978, the President withheld approval from H.R. 9370, the National Aquaculture Policy Act of 1978. At that time, he indicated that the Administration recognized the importance of aquaculture and anticipated working with the Congress to agree on additional improvements in the Government's aquaculture program. The President was particularly concerned about offering major new Government subsidies such as loan guarantees and insurance programs unless and until a clear need for them had been established. H.R. 20 contains similar financial programs.

Earlier this year, the Office of Science and Technology Policy, at the President's request, provided the sponsors of H.R. 9370 an update on steps the Administration had taken to increase Federal efforts in aquaculture and presented a conceptual framework of potential aquaculture legislation. The enclosed amended version of H.R. 20 reflects this conceptual framework. It now excludes the questionable financial programs and costly demonstration facilities. It does, however, include a national policy statement on aquaculture and calls for the development of a National Plan for Aquaculture. In addition, the bill provides for studies to investigate the need for further financial programs and to examine how we can reduce undue regulatory constraints that may face the aquaculture industry.

The enclosed bill also recognizes the establishment of the Joint Subcommittee on Aquaculture in the Office of Science and Technology Policy. This Subcommittee is currently developing the National Aquaculture Plan. This coordinating mechanism is working well.

This bill would eliminate premature and duplicative financial programs. Other key provisions of the original vetoed bill are now being carried out. These provisions include a coordinating device for Federal agencies, the development of a National Aquaculture Plan including an assessment of aquaculture in the United States.

It is the policy of this Administration to undertake those research, transfer, and assistance programs and activities necessary and appropriate to facilitate the development of an active and viable U. S. aquaculture

Honorable Thomas S. Foley

industry. Based on this policy, the Department of Agriculture has increased its activities in aquaculture. An Aquaculture Coordinator has been hired to coordinate aquaculture programs and activities throughout the Department. An Aquaculture Work Group has been established to draft a USDA Plan for Aquaculture. That Plan will be completed this year. The USDA is an active member of the Joint Subcommittee on Aquaculture and is participating in the development of the National Plan.

The attached draft bill would provide a meaningful statement on the importance of aquaculture and underscore the Administration's efforts to facilitate this important industry's development.

The Office of Management and Budget advises that there is no objection to the presentation of this report and that enactment of this proposed legislation would be in accord with the Administration's objectives.

Sincerely,

A large, stylized handwritten signature in black ink, likely belonging to the Secretary mentioned in the text below it. The signature is fluid and cursive, spanning across the width of the page.

Secretary
Enclosure

H.R. 20

Amendment in the nature of a substitute:

Page 1, line 3, strike all after the enacting clause and insert in lieu thereof the following:

That this Act may be cited as the "National Aquaculture Act of 1979".

SEC. 2. FINDINGS, PURPOSE, AND POLICY.

(a) FINDINGS.--Congress finds the following:

(1) The harvest of certain species of fish and shellfish exceeds levels of optimum sustainable yield, thereby making it more difficult to meet the increasing demand for ^(some) aquatic food.

(2) To satisfy its extensive market for aquatic food, the United States imports more than 50 percent of its fish and shellfish, but this dependence on imports adversely affects the national balance of payments and contributes to the uncertainty of supplies.

(3) Although aquaculture currently contributes approximately 10 percent of world seafood production, less than three percent of current United States seafood production results from aquaculture. Domestic aquaculture production, therefore, has the potential for significant growth.

(4) Aquaculture can provide expanded and new sources of food, industrial materials, pharmaceuticals, energy, jobs, can assist in the control and abatement of pollution, and can improve the quality of rural life.

(5) The rehabilitation and enhancement of fish and shellfish resources are potential applications of aquacultural technology.

(6) The principal responsibility for the development of aquaculture in the United States must rest with the private sector.

(7) Despite its potential, the development of aquaculture in the United States appears to have been inhibited by many economic, legal, and production factors.

(8) Many areas of the United States are suitable for aquaculture, but are subject to land-use or water-use management policies that may inhibit the development of aquaculture.

(b) PURPOSE.--It is the purpose of this Act to promote aquaculture in the United States by--

(1) declaring a national policy for aquaculture;

(2) establishing and implementing a national aquaculture development plan; and

(3) encouraging activities in both the public and private sectors of the economy;

that will facilitate increased aquacultural production, the coordination of domestic aquacultural efforts, the conservation and enhancement of aquatic resources, the creation of new industries and job opportunities, and other national benefits.

(c) POLICY.--Congress declares that aquaculture has the potential for augmenting existing commercial and recreational fisheries, and for producing other renewable resources, thereby assisting the United States in meeting its future food needs and contributing to the solution of world resource problems. It is, therefore, in the national interest,

and it is the national policy, to encourage and enhance the development of aquaculture in the United States.

SEC. 3. DEFINITIONS.

As used in this Act, unless the context otherwise requires--

(1) The term "aquaculture" means the propagation and rearing of aquatic species in controlled or selected environments, including, but not limited to ocean ranching (except private ocean ranching of Pacific salmon for profit in those States where such ranching is prohibited by law).

(2) The term "aquaculture facility" means any land, structure, or other appurtenance that is used for aquaculture and is located in any State. Such term includes, but is not limited to, any laboratory, hatchery, rearing pond, raceway, pen, incubator, or other equipment used in aquaculture.

(3) The term "aquatic species" means any species of finfish, mollusk, crustacean, or other aquatic invertebrate, amphibian, reptile, or aquatic plant.

(4) The term "person" means any individual who is a citizen or national of the United States,

any Indian tribe, any institution of higher education, and any corporation, partnership, association or other entity (including, but not limited to, any community development corporation, producer cooperative, or fishermen's cooperative) organized or existing under the laws of any State.

(5) The term "Plan" means the National Aquaculture Development Plan required to be established under section 4.

(6) The term "Secretaries" means the Secretary of Agriculture, the Secretary of Commerce, and the Secretary of Interior.

(7) The term "State" means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, the Virgin Islands of the United States, Guam, and the Commonwealth of the Northern Mariana Islands.

SEC. 4. NATIONAL AQUACULTURE DEVELOPMENT PLAN.

(a) IN GENERAL.--(1) Within 18 months after the date of the enactment of this Act, the Secretaries shall establish the National Aquaculture Development Plan. Within six months after such date of enactment, the Secretaries shall give interested persons and organizations an opportunity to comment during the development of the Plan.

(2) In developing the Plan, and revisions thereto under subsection (d), the Secretaries shall consult with other appropriate Federal officers, appropriate States, and appropriate Regional Fishery Management Councils established under section 302 of the Fishery Conservation and Management Act of 1976 (16 U.S.C. 1852).

(b) CONTENTS OF PLAN.--The Plan shall:

(1) Identify aquatic species that the Secretaries determine to have significant potential for culture on a commercial or other basis and recommend actions to be taken by the public and private sectors (which may include, but is not limited to, research and development, technical assistance, demonstration, extension education, and training activities) that would achieve such potential. The plan shall address the following matters as may be appropriate, taking into account the status of aquaculture regarding the aquatic species concerned:

- (A) Aquaculture facility design and operation.
- (B) Water quality management.
- (C) Use of waste products.
- (D) Nutrition and the developing of economical feeds, including natural food sources.
- (E) Life history, genetics, physiology, pathology, and disease control (including research regarding organisms that may not be harmful to fish and shellfish but are injurious to humans).

(2) Identify, as appropriate, research programs on the effect of aquaculture on estuarine and other water areas and on the management of such areas for aquaculture.

(3) Identify, as appropriate, programs to analyze, and to formulate proposed resolutions of, the legal or regulatory constraints that may affect aquaculture.

(4) Include such other research and development, technical assistance, demonstration, extension education, and training programs as the Secretaries deem necessary or appropriate to carry out the purpose and policy of this Act.

In formulating the Plan, the Secretaries shall, to the extent practicable, take into account any significant action that (i) has been, or is proposed to be, undertaken by any other Federal department or agency, any State agency, or any person; and (ii) may affect the accomplishment of the Plan.

(c) ACTIONS AND IMPLEMENTATION.-- With respect to each action referred to in the Plan, the Secretaries, acting individually, jointly,

or collectively, shall have responsibility for implementing the action and shall determine the period of time within which each such action should be completed in order to implement the plan. The specifications of Secretarial responsibilities for implementing actions shall be determined by the Secretaries on the basis of--

(A) the responsibilities conferred on the respective Secretaries by law or by any executive action having the effect of law (including, but not limited to, Reorganization Plan Numbered 4 of 1970); and

(B) the experience, expertise, and other appropriate resources that the department of each such Secretary may have with respect to the action required under the program concerned.

(d) REVISION OF PLAN.--The Secretaries shall undertake periodic reviews of the operation and effectiveness of the Plan. If as a result of any such review, or the aquacultural assessment required under subsection (e), the Secretaries determine that--

(1) any aquatic species not currently identified in the Plan has significant potential for aquaculture;

(2) any action specified in the Plan is not being accomplished on a successful and timely basis; or

(3) any action specified in the Plan should be terminated because its objectives have been achieved or its projected benefits do not warrant further support;

the Secretaries shall appropriately amend the Plan.

(e) CONTINUING AQUACULTURE ASSESSMENT.--The Secretaries shall through the Joint Subcommittee on Aquaculture undertake a continuing

assessment of aquaculture in the United States for the purpose of maintaining on a continuing basis--

(1) a complete profile of the aquacultural industry with respect to the incidence, size, markets, and status of commercial aquacultural enterprises;

(2) the identification of private and public institutions and organizations involved in aquacultural research, extension, credit, and market development;

(3) the identification of the various aquatic species being cultured and a description of the status of commercial development of each such species;

(4) to the extent practicable, the identification of aquacultural production regions, species, and markets that have significant potential for development;

(5) a catalog describing all Federal programs and activities that directly or indirectly encourage, support, or assist aquaculture; and

(6) the identification of the economic, physical, legal, institutional, and social constraints that inhibit the development of aquaculture in the United States.

SEC. 5. FUNCTIONS AND POWERS OF SECRETARIES.

(a) DISCRETIONARY FUNCTIONS.--In implementing any program under the Plan, the Secretaries may--

(1) provide advisory, educational, and technical assistance (including training) with respect to aquaculture to interested persons, but in providing such assistance, shall, to the maximum

extent practicable, avoid duplication of similar assistance provided by other Federal departments and agencies and by State agencies;

(2) consult and cooperate with interested persons, Federal departments and agencies, State agencies, and regional commissions;

(3) encourage the implementation of aquacultural technology in the rehabilitation and enhancement of publicly owned fish and shellfish stocks (including such rehabilitation and enhancement by private nonprofit enterprises), and in the development of private commercial aquacultural enterprises;

(4) prescribe such regulations as may be necessary to carry out such action.

(5) assess the biological, technical, and economic feasibility of any aquacultural system, including:

(A) tests of the system and, if necessary, construct, operate, and maintain experimental aquaculture facilities (not including production-scale facilities) for testing laboratory results, and

(B) such other tests or analyses as may be necessary;

(6) develop methods to enhance stocks of aquatic species; and

(7) conduct such other tests or analyses or take such other actions as the Secretaries deem necessary or appropriate.

(b) INFORMATION SERVICES.--(1) In addition to performing such other functions that are required under this Act, the Secretaries may--

(A) establish and maintain an information service for the collection, analysis, and dissemination of scientific, technical, legal, social, and economic information relating to aquaculture;

(B) conduct surveys, in coordination with other Federal departments and agencies, of public and private aquacultural activities being conducted in the United States for the purpose of acquiring information on acreages, water use, production, markets, culture techniques, and other relevant matters;

(C) provide reporting service on such surveys;

(D) arrange with foreign nations for the exchange of information relating to aquaculture;

(E) conduct studies to determine whether existing capture fisheries could be adversely affected by competition from products produced by commercial aquacultural enterprises and include in such study--

(i) an assessment of any such adverse effect, by species and by geographical region, on such fisheries, and

(ii) recommended measures to ameliorate any such effect; and

(E) report to Congress on the findings made under the study provided for under subparagraph (D) in the biennial status report required under subsection (d).

(2) Any production information submitted to the Secretaries under paragraph (1)(B) shall be confidential and may only be disclosed if required under court order. The Secretaries shall prescribe such procedures as may be necessary to preserve such confidentiality, except that the Secretaries may release or make public any such information in any aggregate or summary form that does not directly or indirectly disclose the identity, business transactions, or trade secrets of any person who submits such information.

(d) BIENNIAL REPORT.--The Secretaries shall through the Joint Subcommittee on Aquaculture prepare on a biennial basis, and submit to Congress, a report on the status of aquaculture in the United States. Each such report shall contain a description and evaluation of the actions undertaken with respect to the Plan during the reporting period, an explanation of any revisions made to the Plan under section (4)(d) during the reporting period, and such other comments and recommendations regarding aquaculture in the United States as the Secretaries deem appropriate. The first report required under this subsection shall be submitted to Congress by September 30, 1981.

SEC. 6. COORDINATION OF NATIONAL ACTIVITIES REGARDING AQUACULTURE.

(a) ESTABLISHMENT.--There is established the Joint Subcommittee on Aquaculture of the Federal Coordinating Council on Science, Engineering, and Technology (in this section referred to as the "Subcommittee") that shall be composed of the following members or their designees:

- (1) The Secretary of Agriculture.
- (2) The Secretary of Commerce.

- (3) The Secretary of the Interior.
- (4) The Secretary of Energy.
- (5) The Secretary of Health, Education and Welfare.
- (6) The Administrator of the Agency for International Development.
- (7) The Chairman of the Tennessee Valley Authority.
- (8) The Director of the National Science Foundation.
- (9) The Administrator of the Environmental Protection Agency.
- (10) The Chief of Engineers.
- (11) The Administrator of the Small Business Administration.
- (12) The Governor of the Farm Credit Administration.
- (13) Other Federal agencies as appropriate.

(b) PURPOSES AND FUNCTIONS.--The purpose of the Joint Subcommittee on Aquaculture is to increase the overall effectiveness and productivity of Federal aquaculture research, transfer, and assistance programs. In fulfilling this purpose, the Subcommittee shall:

- (1) Review national needs for aquaculture research, transfer, and assistance.
- (2) Assess the effectiveness and adequacy of Federal efforts to meet those national needs.
- (3) Undertake planning, coordination, and communication among Federal agencies engaged in the science, engineering, and technology of aquaculture.
- (4) Collect, compile, and disseminate information.
- (5) Encourage joint programs among Federal agencies in areas of mutual interest.

(6) Recommend to the sponsoring Committees (the Committee on Atmosphere and Oceans and the Committee on Food and Renewable Resources) and the Federal Council specific actions on issues, problems, plans, and programs in aquaculture.

(c) CHAIRMAN.--The Chairman of the Joint Subcommittee on Aquaculture shall serve a term of two years and shall be selected by mutual agreement between the Chairmen of the sponsoring committees of the Federal Council.

(d) REPORTS.--The Subcommittee shall regularly report to the Chairmen of the two sponsoring committees and through them to the Chairman of the Federal Council, on the Subcommittee's activities and on recommendations concerning Federal policies and programs related to aquaculture.

(e) FEDERAL CONSISTENCY.--Each Federal department and agency that has functions or responsibilities with respect to aquaculture or has jurisdiction over any activity that affects, or that may affect, the achievement of the purpose and policy of this Act, shall, in consultation with the Subcommittee and to the maximum extent practicable, perform such function, responsibility, or activity in a manner that is consistent with the purpose and policy of this Act.

SEC. 7. CONTRACTS AND GRANTS.

(a) IN GENERAL.--The Secretaries may each carry out any action or program that such Secretary is responsible for implementing under the Plan through grants to, or contracts with, any person, any other Federal department or agency, any State agency, or any regional commission. The grants or contracts under this section shall cover only a portion of the total estimated cost as determined by the Secretary.

(b) **TERMS AND CONDITIONS.**--Any contract entered into, or any grant made, under subsection (a) shall contain such terms and conditions as the Secretary concerned shall by regulation prescribe as being necessary or appropriate to protect the interests of the United States, except that no such contract may be entered into, and no such grant may be made, for any purpose which is in violation of any applicable State or local law.

(c) **LIMITATION.**--The amount of any grant made under subsection (a) may not exceed an amount equal to one-half the estimated cost of the project for which the grant is made.

(d) **AUDIT.**--Each recipient of a grant or contract under this section shall make available to the Secretary concerned and to the Comptroller General of the United States, for purposes of audit and examination, any book, document, paper, and record that is pertinent to the funds received under such grant or contract.

SEC. 8. CAPITAL REQUIREMENTS FOR AQUACULTURE.

(a) **CAPITAL REQUIREMENTS.**--(1) The Secretaries, through the Joint Subcommittee on Aquaculture, shall, within 18 months after the date of enactment of this Act, conduct and report on a special study of the capital requirements of the United States aquaculture industry. The study shall:

(1) document and analyze any capital constraints that affect the development of aquaculture in the United States; and

(2) evaluate the role that appropriate Federal financial assistance does or could play in filling gaps in the normal credit market with respect to aquaculture.

The study will identify the capital needs of the United States aquaculture industry, with a focus on needs that are not being filled either in normal credit channels or through government programs for direct loans, loan guarantees, disaster loans, and insurance.

(b) **CAPITAL REQUIREMENTS PLAN.**--Based on the results of the Capital Requirements Study, the Secretaries shall formulate a Plan for acting on the study's findings. Such Plan shall include:

- (1) those Federal actions, if any, found to be necessary to meet financial needs unmet through normal credit channels and existing Federal programs; and
- (2) recommendations, if any, for legislative actions.

SEC. 9. REGULATORY CONSTRAINTS ON AQUACULTURE.

(a) **REGULATORY CONSTRAINTS.**--The Secretaries, through the Joint Subcommittee on Aquaculture, shall, within 18 months after the date of enactment of this Act, conduct and report on a special study of the State and Federal regulatory restrictions to aquaculture development in the United States. The study shall:

- (1) Include a literature review and a descriptive list identifying overall parameters of the issue.
- (2) Identify and list relevant current and pending Federal regulations restricting the development of commercial aquaculture operations.
- (3) Identify and list relevant current State regulations restricting the development of commercial aquaculture operations in five States selected randomly in five separate geographic regions of the United States.

(4) Conduct case studies of 10 commercial aquaculture operations in the United States representing a wide range of marine and freshwater species to determine practical effects of regulatory restrictions on aquaculture.

(5) Develop a prototypical flow chart time line utilizing the information obtained in items (1)-(4) to identify those regulations and restrictions that could have the most detrimental effect in establishing commercial aquaculture operations in the United States.

(b) REGULATORY CONSTRAINTS PLAN.--Based on the results of the Regulatory Constraints Study, the Secretaries shall formulate a Plan for acting on the study's findings. The Plan will contain specific steps the Federal Government can take to remove unnecessarily burdensome regulatory barriers to the initiation and operation of commercial aquaculture ventures.

SEC. 10. AUTHORIZATION FOR APPROPRIATIONS.

There are authorized to be appropriated to the Departments of Agriculture, Commerce, and Interior such sums as may be required to carry out the programs authorized in this Act.

SEC. 11. DISCLAIMER.

Nothing in this Act shall be construed to amend, repeal, or otherwise modify the authority of any Federal officer or any Federal department or agency to perform any function, responsibility, or activity authorized under any other provision of law.

American Farm Bureau Federation

June 18, 1979



WASHINGTON OFFICE
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Honorable Ed Jones, Chairman
Subcommittee on Conservation and Credit
Honorable E de la Garza, Chairman
Subcommittee on Department Investigations,
Oversight, and Research
Committee on Agriculture
United States House of Representatives
Washington, DC 20515

Sirs:

The American Farm Bureau Federation commends your Subcommittees and supports your efforts to promote the development of aquaculture in the United States.

Farm Bureau is the nation's largest general farm organization, representing more than 3 million families who are voluntary, dues-paying members in more than 2,800 county Farm Bureaus in 49 states and Puerto Rico. Farm Bureau members are engaged in the production and marketing of every major commodity, including the production of fish for human consumption and other purposes.

At the most recent annual meeting of the American Farm Bureau Federation, the voting delegates of the member State Farm Bureaus adopted the following statement on aquaculture:

"Aquaculture should be treated as an agricultural enterprise. Federal activities affecting aquaculture should be under USDA. We will oppose any proposal that would unreasonably impede the movement of farm-produced fish to market."

Farm Bureau supports the basic objectives of H. R. 20, the National Aquaculture Act of 1979. However, we recommend that the bill be amended to designate the Secretary of Agriculture, rather than the Secretary of Commerce, as the Cabinet official in charge of developing and implementing the National Aquaculture Development Plan.

We believe that such an amendment would serve the best interests of both producers and consumers. USDA has had many years of successful experience with similar programs to improve the production and marketing of live animals and poultry. This experience would be beneficial in the implementation of a national aquaculture policy.

In addition, the proposed amendment would be consistent with Section 1502(b) of the Food and Agriculture Act of 1977 which amended the Organic Act to include aquaculture "among the basic functions of the Department of Agriculture."

We urge your favorable consideration of our recommendation and prompt passage of H. R. 20.

We respectfully request that this letter be made a part of the hearing record.

Sincerely,

Vernie R. Glasson
Vernie R. Glasson, Director
National Affairs

CC: Members of the Subcommittees



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